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THE ART
OF
MURAL DECORATION.

BY T. GOODWIN,

ONE OF THE AUTHORS OF THE "MANUAL OF ILLUMINATION,"
"THE LIFE OF FRA ANGELICO DA FIESOLE."

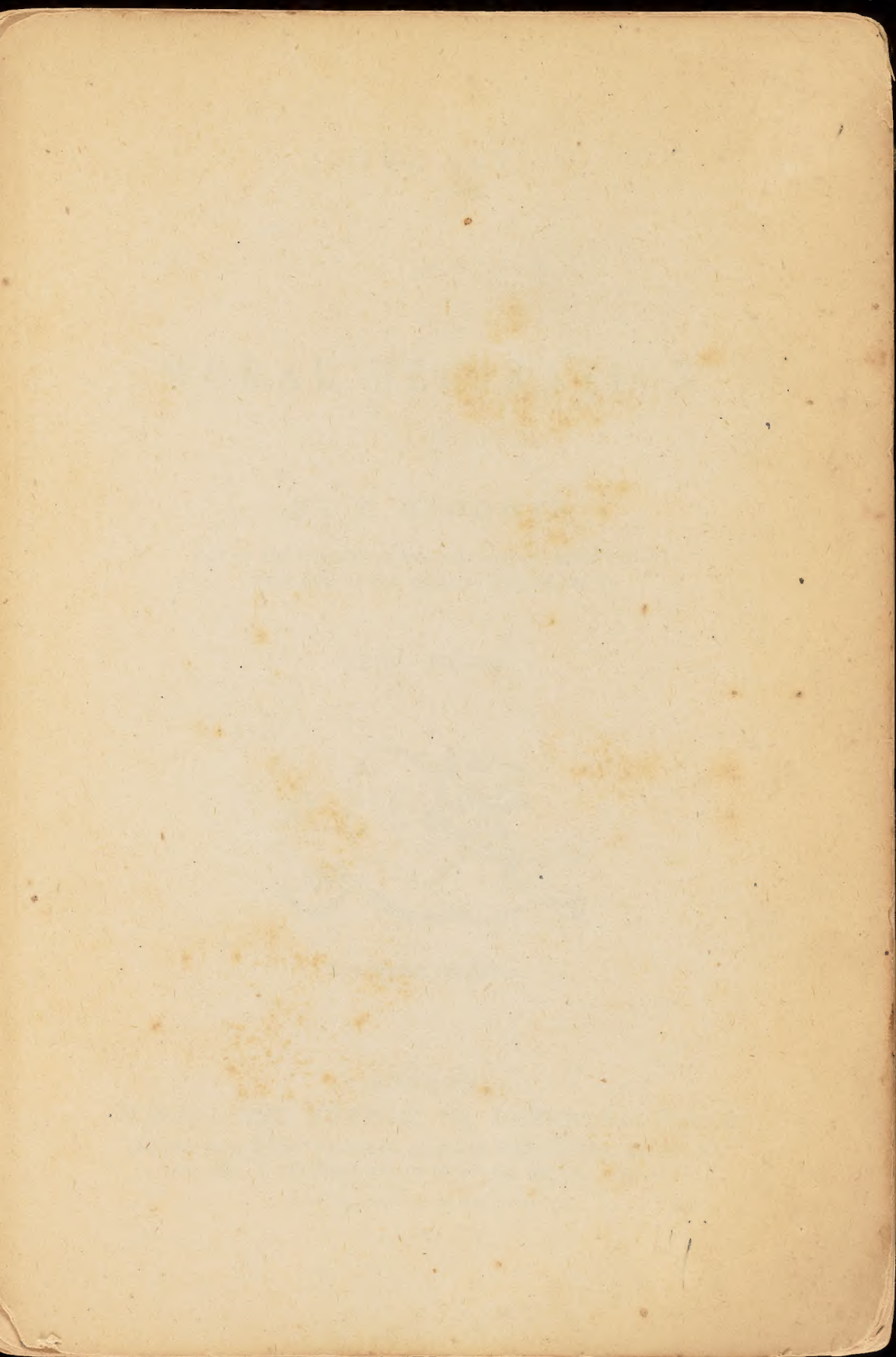
THIRD EDITION.



Ars probat artificem.

LONDON:
WINSOR AND NEWTON, 38, RATHBONE PLACE.
1874.

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WINSOR AND NEWTON, 38, RATHBONE PLACE,
Manufacturing Artists' Colourmen, by Special Appointment, to Her Majesty,
and Their Royal Highnesses the Prince and Princess of Wales.

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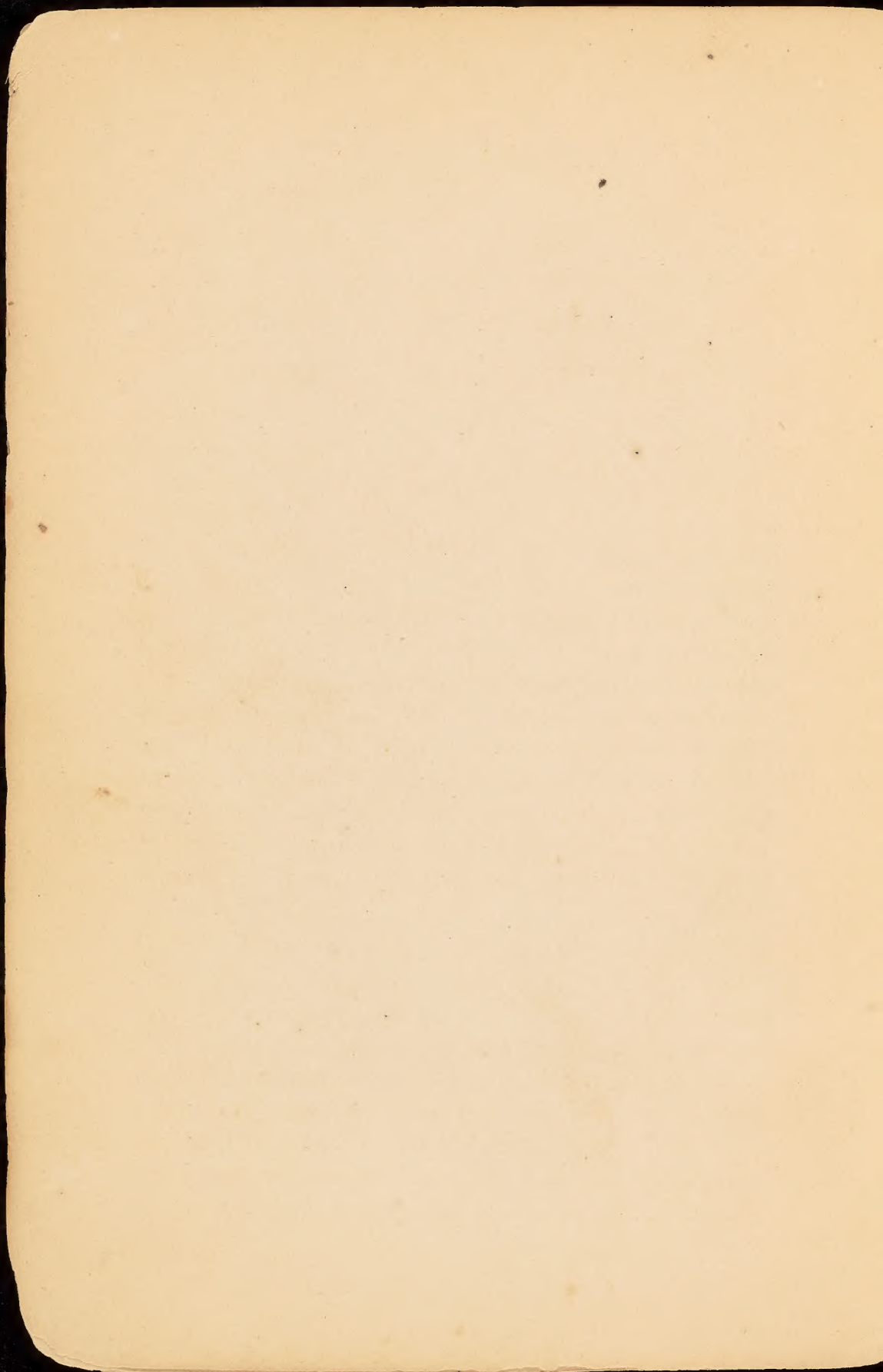
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PREFATORY REMARKS.

The object of this Manual being to describe, in as few and simple words as may well be, the Art of Mural Decoration by means of colour and gilding—sometimes called Polychromy—very little prefatory matter appears necessary or desirable. With theories or so-called laws of colour the author has absolutely nothing to do, that being left to the artist: with the history of the art, only so far as may relate to or explain its practise at the present time, all else being the province of the archaeologist.

The revival of a feeling for Gothic Art, which employed colour so largely, happening to coincide with the rise of an ecclesiastical movement, for some time prejudiced the public mind against Mural Decoration.

The decorator's bright colours were regarded with suspicion as vehicles of false doctrine and Foreign theology. It is not so now, however. We no longer associate decorative art with any religious tendencies, esteeming it rather as a means of satisfying that inward craving for

the beautiful, which Nature, the Great Teacher, has implanted in us to outlive the transitory theories and dogmas of the hour. We no longer colour churches and parsonages only, but all our secular and domestic buildings are thought incomplete, until the architect's work has been supplemented by that of the decorator.

We do not exaggerate when we say that scarce one large public edifice has been erected in the last ten or fifteen years, but has been more or less adorned with colour.

It is not, however, by any means with reference to such works as these, that this little Manual is designed. They are intrusted, with varying success, to professional decorators—we write for amateurs. The amateur has a very sufficient sphere of his own, and there are many small works quite within his compass and means. Many a small parish church might owe its adornment to the hands of some would-be Angelico, many a humble school room might have the poverty of its white-washed walls redeemed by some skilful hand, while the decoration of the dwelling house is a work always open to all, and might form an agreeable relief to those weary of illuminating illegible texts, or spoiling glass pots by converting them into *potichomanie*. That amateurs do not undertake this more, we believe, is from a mistaken idea of the difficulty or expense attending the art. We have endeavoured, therefore, in the following pages, to give so clear and plain a description of the various methods and processes which constitute the Art of Mural Decoration as to enable any one with a small knowledge of draughtmanship, and competent to handle a brush, to take up a

work from the beginning and carry it through with a success only limited by his patience and powers of application. While we have striven to render this Manual thoroughly practical and useful, we have been anxious to avoid dry technicalities as much as possible, and to touch on such matters of interest as the nature of the subject allowed.

At the same time, no process is described or recommended which has not been tested, and many are given, which, though old-established practises with professional decorators, will doubtless be new to amateurs. Briefly, then, we have attempted to compress within the limits of a Manual, all that may be useful and practical on the subject of Mural Decoration, leaving extraneous matter to those whom it more properly concerns.

THE ART
OF
MURAL DECORATION.

HISTORIC REVIEW.

There is no habit more common than that of accepting results without bestowing a thought upon the means by which they were attained. Perhaps life is too short to enable us to act otherwise in practical matters. The general consent of those best able to judge as to the utility or quality of any article must determine our adoption or rejection of it. Nor do we care to search into and analyse its history and nature unless we desire to make some change or improvement in the article itself. And yet in the slow and gradual advance from the first rough conception to the perfect, finished object, in the difficulties encountered and overcome, and the patient labour and thought necessary to its formation, there cannot but be much interest to a contemplative mind. When an artist sits down to his carefully adjusted easel with his mahl stick and sheaf of hog-hair and sable pencils,

and proceeds to 'set' his palette from the numerous little tinfoil tubes holding his pigments, he seldom thinks of the history contained in each one of those articles he so often uses. We have to travel back in imagination, aided by the pages of a Theophilus or Cennini, and peering into some monastic cell, watch its occupant as he busily grinds and sifts, and washes and boils and mixes all his crude pigments, or laboriously selects the little bundles of hair which are to form his pencils, before we fully appreciate what has been achieved for us. A treatise on Mural Decoration as practised now, will hardly be complete without some reference to its employment in days gone by. Nor could any subject well be found possessing greater attractions for lovers of art. For the conditions under which the art, we now call decoration, existed in the early times connected it so closely with that which is properly termed pictorial art, that the one could scarcely be described or recorded without constant reference to the other. And since decorative art, not only like all other arts, derives its rise from architecture, but even cannot exist without it, it would be very hard to draw their respective limits. Passing over too the influence which religious theories have at all times exercised over the decorative art—the power of climate, habit and innumerable circumstances to foster or restrain it, and coming to the more practical and material part, the preparation of pigments in the middle ages, would lead us somewhat deep into Chemistry, nay, almost, according to the ideas of those times, into Alchemy, and their application, would include no slight history of the arts of Illumination and Heraldry.

From a scheme so vast as this, the author of a little Manual like the present may well be excused, not only on the very sufficient ground of want of knowledge, power and space, but also because there are already many valuable works in existence written by those who are masters of the subject, supplying all necessary information. It will be interesting, however, to take a very brief review of the gradual progress of the art in different times and countries, that we may examine how it was practised by various nations, and the improvements effected by experience, and hence, learn how best it may be practised at the present time.

Inasmuch, as painting consists simply in the application of pigments diluted and mixed with various fluids to any given surface, it will be seen that to understand clearly the various systems of painting which have existed, it is necessary to enquire first what and how many these fluids are. They are called vehicles, and sometimes, but not so correctly mediums. A vehicle is that fluid which carries and bears the colour in suspension from the palette to the surface to be painted. A medium properly speaking, is a vehicle which is neither actually oil nor water, but possesses to a certain degree the properties of both. Although we recognise now six varieties of systems of painting, viz.:—Tempera, Fresco, Encaustic, Oil, Stereochrome, and Spirit Fresco, it will much simplify the subject, if we divide them practically into two heads. Those possessing a watery vehicle, and those employing an oily vehicle. Under the first will fall Tempera or Distemper, Fresco and Stereochrome; under the second, Oil painting proper, Encaustic and Spirit Fresco. Stereo-

chrome or water-glass, speaking strictly, is the only system to which the term water-colour is applicable. In it the powdered pigments are applied with a vehicle of pure distilled water alone. In Fresco, water mixed with lime is used. In Tempera, the vehicle is mixed with parchment or glue size, white and yolk of egg, gum and other substances of a glutinous nature. Encaustic appears to have been practised among the ancients in two or three several ways, some more resembling the art of modelling in wax by the aid of a heated graver or *cestrum*, and others where the wax was held in solution by a volatile oil, such as turpentine or naphtha. But in all alike, wax was the basis, and for this reason it may be regarded as belonging rather to the oily than the aqueous division of vehicles. In the recently invented method of Spirit Fresco, wax is used mixed with certain resins and oil of spike, exhibiting a curious link between encaustic and oil painting proper, which uses various oils, as linseed, poppy and nut variously mixed with turpentine and other dryers.

It very little concerns the present purpose to enquire who first discovered or practised the art of architectural decoration, even were the inquiry practicable. The love of colour is so closely planted in human nature and is found so universally in all nations, varying infinitely as they may in other respects, that we may safely conclude that colour has always formed a part of and been associated with the requirements of architecture. It could not be otherwise from the very nature of the materials employed. When the changes or influences of the climate first prompted man to raise some shelter for his head,

with what materials did he set to work? The trunks and massive boughs of trees which the storm had laid low would naturally be the fittest for his purpose. And these gnarled and twisted into a thousand spiral curves, with their grey-green bark flecked with purple, and scarlet, and gold mosses and lichen, set up side by side, formed the first rude habitation. Add to this, a carpet of emerald green varied by every hue of gem-like flowers, and the great arched dome of the bright blue sky, seen through the many crevices of the roof, and you have all the highest elements of artistic decoration combined in the simplest possible form. Was it possible for men who had passed their first existence in some garden-like locality, gorgeous with such an utter prodigality of colour and sensuous attraction, not to attempt to recal in some degree its beauties as the necessities of a more artificial existence became more and more forced on them? And again, as they progress and employ first the skins of the beasts slain in the chase, and then the products of the loom and cunning work of the skilful female fingers for the comfort and adornment of their habitations—their ideas of colour become almost unconsciously systematised and regulated, until we find them perfected and mature in the mighty temples and rock-hewn tombs of Egypt, where every colour has its law, and place, and meaning, not to be violated or altered, and where art and religion appear to have allied themselves. With Egypt then we may well commence our review of ancient Decorative Art.

From the evidence not alone of the temples and other buildings, but also from the extensive decorations found

existing on domestic utensils, furniture, &c., we may safely conclude that the Egyptians possessed a strong natural love for colour, though of somewhat crude character. Their colouring consists of different dispositions of the primaries, red, blue and yellow, with the addition of green and black, according to the same severe conventional principles, which ruled their ornament. It is difficult to see any advance from the earliest to the latest periods. The art never progressed beyond a precocious childhood. With play of fancy or struggles after an ideal type of beauty, it had nothing to do. It was practised under the jealous care and superintendence of the priesthood, and being consecrated to the perpetuation of certain ideas respecting the gods and their representative, the king partook of the conservative and stationary character which ever marks an era of priestly domination, and which may be seen later in Byzantine work. The method employed by the Egyptians was *Tempera* or *Distemper*, that is their colours were diluted with weak glue and water, the glue probably being made from the hides of the rhinoceros and hippopotamus or crocodile. Owing to the marvellously clear and pure atmosphere of the country, this vehicle has lasted in a manner unequalled by anything else—the colours, exposed in many cases to the external air, are as clear and sharp as if applied yesterday, and scarcely in any instance are there signs of fading. Wax has been discovered mixed with the colours in some cases, only we believe in small portable pictures or pieces of furniture. “According to the best chemical analysis of Egyptian colours, the blues appear to be oxides of copper with a small admixture of

iron, none of them contain cobalt." Belzoni, therefore, who supposed the Egyptian blues to be indigo, appears to be in error. "There can be little doubt," says Mr. Field speaking of ultramarine, "that is the same pigment which still continues in all its original force and beauty in the Temples of Upper Egypt, after an exposure of at least three thousand years."

"The reds are red oxide of iron mixed with lime. The yellows which are sometimes of a pure bright sulphur colour, appear to be generally vegetable colours; the greens are a mixture of this vegetable yellow with copper blue; this vegetable, it has been suggested, might be the *henné* plant which is still used in the east for such purposes. The bluish green which sometimes appears on Egyptian antiquities is a faded blue. The blacks might be from wine lees, burnt pitch, charcoal or soot." (Timbs, "Painting popularly explained.")

Thus it will be seen, with few exceptions, the pigments employed are formed on such good chemical basis as to leave small doubt as to their durability. Much of our knowledge of the materials employed by the Egyptian art-workmen is derived from discoveries in the tombs of Thebes and elsewhere. Here have been found palettes, slabs, mullers and specimens of the reed pens used in "setting out" their designs. According to Mr. Owen Jones, the method of procedure with a wall was as follows: "The wall was first chiselled as smooth as possible, the imperfections of the stone were filled up with cement or plaster, and the whole was rubbed smooth and covered with a coloured wash; lines were then ruled perpendicularly and horizontally with red colour, form-

ing squares all over the wall, corresponding to the proportion of the figures to be drawn upon it. The subjects of the painting and of the hieroglyphics were then drawn on the wall with a red line, most probably by the priest or chief scribe, or by some inferior artist, from a document divided into similar squares; then came the chief artist who went over every figure and hieroglyphic with a black line, and a firm steady hand, giving expression to each move, deviating here and confirming there the former red line. The line thus traced was then followed by the sculptor. In this state there are instances of a foot or a head having been completely sculptured (incised) whilst the rest of the figure remains in outline. The next process was to paint the figure in the prescribed colours; and in some cases the painted line deviates from the sculptured line, showing that the painter was the more important workman, and that even in this last process no possible improvement was omitted. There are other instances where a considerable deviation from the position of a leg or arm has been made after the sculpture was finished and painted, the part was recarved and the defective portion filled in with plaster, which having since fallen out, furnishes us with this curious evidence of their practice. The same rigid system of procedure must have obtained in the decoration of their hieroglyphic MSS., sacophagi and obelisks, all of which are sacred in intention and conventional in execution."

Of the extensive employment of the decorative art among the Greeks, the Etruscans and the Romans there is not the slightest doubt, although the descriptions in

Pliny, Vitruvius and others, generally obscure and frequently impossible, do not give us particularly clear notions of the system employed. Both Greeks and Romans, however, made use of Tempera and perhaps more largely Encaustic. In the practise of Tempera there could have been little variation from the method employed by the Egyptians. The clear bright sky of Greece or Rome, though less dry and pure than that of Egypt, would allow the use of media inapplicable in northern regions. There is little doubt that the vehicle employed was the ordinary glue size, perhaps supplemented with yolk of egg and the juice from the cuttings of fig trees. In many cases at Pompeii, colours in a water vehicle have been afterwards protected with a colourless wax varnish, made probably either by melting wax by heat in a drying oil, or by solution in a volatile oil such as naphtha. The pigments used, appear simply the red and yellow ochreous earths with white and a black, which was most likely lamp black. Various hues and tints were derivable from those possessing of course the same qualities, and with this limited palette they appear to have been for a long time content. With the Greeks appears to have originated the system styled Encaustic, afterwards introduced into Rome, of which Pliny has left us so puzzling an account. Passing over two methods of practising this art, which seem allied more to modelling than painting, we find in the third a system differing but little from that now employed. Although the term encaustic is vaguely given to any system where wax is used, it does not strictly involve the use of wax at all, meaning simply "a burning in." However, in this the levigated colours were mixed with

pure wax dissolved by means of heat and afterwards kept in pots. The wall having been prepared and saturated with dissolved wax, these colours must have been sufficiently liquid to be applied with the pencil, by solution in some essential or fixed oil, and perhaps by the addition of some resin. When the design was completed and the colours dry, a brazier of live coals or a heated cautery was held at some little distance and passed over the wall surface until the colours frothed. This brought up and fused the wax of the ground with that of the medium, and so "locked up" the colour between them, somewhat in the way attained by the lime in Fresco, or the water-glass in Stereochrome. The last process was that of polishing the surface with a cerate, and finally rubbing it down with clean linen cloths until it had attained a perfect lustre and brilliant polish like that of a mirror. Such was the Encaustic method of the Greeks and Romans and of the early Christians, before their attention was turned to the more durable system of mosaics. Later, we shall point out the chief differences between their Encaustic and that used at the present day. In this, in Tempera, and possibly in Fresco secco, *i.e.*, lime water colours upon dry plaster, did they decorate their gorgeous Atria, Temples and Basilicas, as the Pompeian remains amply demonstrate. No gentleman's house was thought complete without its lavish adornment of arabesque and figure subjects, which in the later days of the Empire degenerated into something very like scene painting. The Romans never had the true and delicate feeling for art which formed part of the life and nature of the Greek, having a preference for gorgeousness

rather than chasteness, strength than beauty, and violent contrast than subtle harmony.

With Christian and Mediæval art, we begin to emerge somewhat from the region of ingenious guessing and hap-hazard conjectures, and arrive at tolerably safe ground. Theophilus and Eraclius in the twelfth, and Cennino Cennini in the fifteenth centuries supply us with information as valuable in matter as it is amusing in style, and together with the rolls and MS. accounts of various monasteries, and the charming gossiping lives of Vasari, afford materials for a history of the art which have been ably employed by Sir C. Eastlake and others.

For a long time, the early church regarded the decorative and pictorial arts with suspicion and dislike. For this there may be several reasons, the chief being that Manichean belief in the inherent evil of matter which almost unavoidably infected a new sect, struggling against a system of idolatry. To the ascetic and heatedly zealous mind of a Christian convert, the gentle legends and tender myths of Olympus were nothing less than doctrines of devils—all that ministered thereto was poisoned and infected—the sensuous attractions of colour, and form, and music, snares of the evil principle, and the practisers of those arts which had conduced so much to the civilization of the world, dealers in unholy things. Thus, for a long while, their efforts were directed to render the form of worship as purely spiritual as might be, to the exclusion of all that might affect or move the mind through the senses. It must be remembered, also, that their persecution as a political sect would necessarily

retard the progress of art, since men in frequent danger of their lives were not very likely to attract attention to themselves by the splendour of their conventicles, or devote much time or thought to their adornment. After a while, however, as the little body of Christians ramified and increased, the necessity of making some concessions to the predilections of heathendom was recognised, and the church began that policy of suiting herself to the circumstances and foibles of her time which has generally marked her history. While some of her ablest writers conciliated the philosophers, by trying to show the common ground existing between Christianity and Philosophy, and the school of Alexandria allegorised until fact seemed very like fable—in art various heathen emblems and figures were adopted as typical of Christ and Christian ideas. The dove, sacred to Venus, becomes the emblem of Christian love; the cock, of watchfulness; the phoenix and peacock, of eternity; the palm branch, the symbol of victory, the sign of victory over death; while Cupid and Psyche come to signify eternal love, and Christ is represented as a shepherd, as Orpheus and sometimes even as Agonothetes, or Umpire in the public games. All these may be seen, with many other specimens of decoration and pictorial art in the Roman Catacombs, which for a long time were the only places of safety both for worship and sepulture. But when, on the accession of Constantine, that remarkable Concordat between church and state took place, which is ordinarily called his Conversion, the state church had time and opportunity to develope, increase, become rich and even ultimately to persecute. As, by degrees, the simple and somewhat

narrow doctrinal ideas of early days became exchanged for the more worldly views better suiting an age of power and luxury, the necessity of gorgeous display, of *spectacle* and lavish use of colour and gold was fully seen, and the decoration of ecclesiastical edifices established in a form which the Catholic church has never since given up.

Whatever effect this practise may have had upon religion, it is impossible to overestimate its influence upon art. The church became the foster-mother and patron of the art-workman, in most cases we must allow a generous one, and the workman repaid her care by contributing to her glories, illustrating her practise and popularising her dogmas through the means of the external senses. Thus, religion and art may be said to have walked hand in hand until that wonderful movement, which in religion is called the Reformation, and in art the Renaissance, but which is really traceable to one and the same cause, enabled art to take up an independent position and stand alone. A very great impetus was given to the practise of Mural Decoration, both in its higher and subordinate branches, by the spread of the monastic system. A body of men living in semi-seclusion would gladly hail the practise of any innocent art as a relief from the tedium and monotony of incessant repetition of the Divine office, specially too, where, as in the present case, it could be brought into use for the aggrandisement of their favourite shrines. And thus grew up a system of artistic practise and conventional tradition which was handed down by one generation of monks to that succeeding it, together with the little secrets and receipts which naturally group themselves around. But

of all orders, the Dominican was ever the most addicted to the fine arts, and from that obedience sprung some of the greatest names of the middle ages. The excellence of mediæval art is to be accounted for mainly by the universal character of mediæval genius. The same man was often painter, architect and sculptor, and thus was able to direct each and all of those branches of art in any work he might be engaged upon. The names of Giotto, Michael Angelo, Rafael and Leonardo will at once recur to the reader as examples of this. The influence this circumstance had upon architecture and sculpture is universally allowed, not less must have been that reciprocally exercised upon both pictorial and decorative painting—the artistic element showing forth in the exquisite conventionalisms and patterns of polychrome, the decorative delighting in introducing its own peculiar gorgeousness and brilliance of effect into the compositions of the painter. But independently of this, religious and secular art were not so broadly distinguished then as now. The same style of architecture was employed for both church and palace, the same painter embellished the cathedral and the council chamber; and thus we find a continual interchange of symbol and ornament, religious and secular; in the church we often see portrayed objects decidedly secular and not a little ludicrous; in the private house, scenes, incidents and emblems which the better taste of those days would reserve for religious edifices. The revival of Gothic art, some thirty years back, gave an example of this exaggerated *usque ad nauseam*. No decoration was considered complete or in true “gothic taste” without incessant repetition of the cross,

fleur de lys and monogram I.H.S., their meaning or special fitness for any position not being thought of for one moment.

It is Mr. Ruskin, I think, who says that in one respect at least, that of colour, the term "dark ages" would be more appropriately applied to the present time than to the middle ages. Our forefathers really delighted in colour, they had a hearty honest love of positive bright tints, applying them boldly, generally with good effect, to nearly all places and purposes. It is not a little singular to turn over the pages of a MS. Hour Book or Missal and examine some of the many interiors of churches it contains. The pavement, brilliant with encaustic or mosaic work—the walls, decorated with diapers and powderings of the most vivid tints and striking contrasts, the legends and martyrdoms of saints perhaps carried round above the string course; piers, arches and mouldings glow with gorgeous colours; the roof high over head is a little mimic heaven with its azure and gold stars, and groups of musical angels; while windows which rival the ruby and sapphire, and emerald in fire, cast their brilliant light upon the marble and jewelled altar and tabernacle, and shrine and rood, and many a fair image decked and adorned with gold and vermillion. Imagine such a fane as this, the air faint with incense, filled with priests and acolytes in robes of fine linen, and brocade, and cloth of gold, grouped with worshippers in quaint and lively costumes of rich texture and bright colour, and we have a tolerably clear idea of a mediæval church as depicted in the MSS. It is somewhat barbaric in its prodigality of colour, slightly overpowering and exhaust-

ing in its glitter of gold and sparkle of jewels, and crude contrast of positive colours. It suggests ideas of a sacred kaleidoscope, and yet is satisfactory as it proves that men and women in those days did not whitewash nature or reduce the prismatic rays to drab. Just as the conversation of the time was broader than good taste sanctions now, so their notions of colour were somewhat more pronounced and positive than we should quite care for at the present day, and yet good of their kind, because honest and true. There is as much difference between mediæval and modern ideas of colour, as there is between the childish faith of the middle ages and the discriminating reason of the present day.

It will be interesting to the amateur to make a brief survey of the gradual rise and progress of the decorative art in our own country, before we turn our attention to the vehicles, systems and matériel employed.

The value of Polychrome as an adjunct to architecture in heightening sculptural decorations, harmonising blank and otherwise unrelieved surfaces, and "picking out" mouldings and carving by light and shade, was early felt. It was not, however, considered as absolutely necessary or indispensable, since there are many buildings which it is well known never received colour in this, or, indeed, in any other way. The degree to which it is used is very capricious also: sometimes the whole of a church will be coloured, to the entire concealment of surface—occasionally of costly material, as alabaster and marble,—while at other times, only parts will be touched, and that sparingly with colour and gold. The same forms and ornaments will be found repeated in many places;

the same treatment of peculiar features, the same broad principles of colour and conventionalism influenced by the particular temperament and character of the individual artist.

The Venerable Bede informs us that Benedict Biscop at the end of the 7th century adorned the church at Weremouth with pictures. Wilfrid also is related to have done the same at Hexham. William, of Malmesbury, relates how Ernulph, Prior of Cantuar, at the end of the 11th century, restored the eastern part of the cathedral, and adorned it "with many coloured pictures which led the wondering eyes to the very summit of the ceiling; and the chancel which Ernulph left unfinished was superbly completed by his successor Conrad, who decorated it with excellent paintings, and furnished it with precious ornaments." (W. of Malmesbury, quoted from Professor Willis's Canterbury Cathedral.)

The earliest traces of colour in churches are very rude, and consist generally of bands of colour on some ground wash. The patterns used in the early paintings bear a strong resemblance to the coeval sculpture and MS. decorations. Winchester Cathedral in the north transept possesses a remarkable piece of painting upon the early Norman arches, executed in two tones of red. The Norman work in Rochester Cathedral has also been extensively decorated, and the sculpture picked out in colour. The spandrels of the triforium and the south transept (13th century) may be particularly instanced. Even this rude Norman work begins to show considerable taste and feeling for colour, as instanced by the use of complimentary and contrasting colours.

The following account quoted from a paper on Polychromatic Decoration by Mr. Whichcord in Neale's papers on Architecture, will be found to give a very accurate description of the gradual developement and improvements effected in colour.

"During the former part of what is called the Early English period, *i.e.* from 1189—1216, decorative painting made but little progress, and the extant specimens exhibit a similar mode to that formerly in use. Colours were used in masses, without distinction of detail. A screen of about this date against the north and south walls of the Lady Chapel at Winchester has the central columns of its tripled shafts painted alternately red and black, the colours on either side of the centre being painted in the contrasting colour. In this case the colour on the columns extends to the adjacent hollow, without any other relief than a double band of black encircling those columns that are red, at about every foot in height. When painting was only partially introduced, as was the case in simple works, such as churches in rural districts, red was the favourite tint used in capitals and bases of the columns, and often appearing as a margin to the internal window-jamb, if it was without mouldings, of the breadth of two or three inches, sometimes with a narrow black line running beside it on its outer edge. Few traces of colouring of much greater interest will be found prior to the accession of Henry III. The paintings in churches of an early character were often executed at a later period; and this may generally be suspected when no letters nor costumes are represented to determine the precise date: such decorations as we have alluded to, with a few figures on the plaster of the chancel walls, under the east window and on the chancel arch painted in red or black outline, a few sentences and a ruder cross or two, are all that the art of the former part of the 13th century appears to have been capable of producing. . . .

"A free and bold style of Arabesque prevailed from the time of Henry III. until the close of the reign of Edward III. Bright and lively colours were applied in masses,—the grounds covered with a composition of foliage and birds, animals and human figures,—sometimes in one tint, sometimes in varied colours. Beautiful instances exist

in Rochester Cathedral, in the groining of the crypt, and in a piece of wall painting in S. Ninian's Chapel: in the same Cathedral, and under the canopy of the monument of Aveline, Countess of Lancaster, in the choir of Westminster. (Strongly resembling these in general effect must be the coloured decorations of S. Jacques, Liege, and the Temple Church, London.) The groined ceiling of Adam de Orleton's Chapel, in Winchester Cathedral, exhibits on a straw-coloured ground among green foliage, with flowers, green and blue medallions, in which are painted the heads of angels surrounded by a nimbus; the groining ribs have their mouldings marked in various colours, and a running enrichment in a chevron pattern is painted red and black on the centre moulding: the coloured mouldings of this date are often powdered with rosettes or similar ornaments in red, black, or gold; and it was not unfrequent to cover with a sculptured diaper even those mouldings which were intended to be painted."

As we have already said, the degree to which colour was applied, varies much. If it was intended to entirely colour the chancel or church; the lower part of the walls up to the string-course was often painted of some darker colour, as chocolate or Indian red, and the brighter tints reserved for the space above, up to the wall-plate or roof. Large surfaces of colour were always broken with diaper patterns in a lighter tint or gold. Thus, light green on dark, pink on maroon, gold on red, were very favourite combinations. Diapers—so called from the designs on napkins and cloths of Ypres—either extend in a continuous pattern all over a surface, or consist of many sprigs, flowers and ornaments, spotted about in geometrical arrangement. These are more properly called powderings. The large diapers were broken and edged by borders of rich and elaborate composition round doors, windows, and openings. Borders also are generally found under string-courses, on wall-plates, and any

position which it was wished to define particularly. In the older paintings, different mouldings were usually coloured without distinction; in later examples, however, we find many colours employed to get the effect of light and shade. Plain surfaces, however small,—as those of small ornamental buttresses—are seldom left unornamented, and usually bear a pattern in two tints of the same colour. The roofs, whether of groined stone or of timber received much attention and ornament. When groined, as we have before noticed in the crypt of Rochester, Adam de Orlton's Chapel, Winchester, S. Jacques, Liege, the roof was generally treated with arabesque and flowing patterns of foliage in green, gold, and red, broken at intervals with medallions of blue, bearing the heads or busts of saints, and sometimes angels with musical instruments. As a very successful modern example of this, the roof of Merton College, Oxford, where the oak boarding of the roof has quite the mellow effect of gold and softens the colours in a remarkable way. Where the roof was of wood, canted, or the ordinary cradle-roof, the panels were frequently tinted blue and covered with devices in gold and colour as monograms, crosses, and most of all stars, which was a very favourite mode of ornament. Bosses, whether of wood or stone, are exquisitely coloured and heightened with gilding—sometimes to the concealment of the material, sometimes allowing the stone or oak to show through. Moulding-ribs are treated with bands, points, and chevrons of colour, as it were, fastening them together. If the roof were of groined stone—frequently also in wood—a bright border ran on either side of the vaulting-rib, unless, however, kept at a sufficient distance

from the rib itself it would have the effect of unduly thickening it in effect, as Mr. Scott notices, was often the case in Italian Polychrome.

The following notices of various roofs despoiled by Will Dowsing, the Parliamentary visitor of churches in the years 1643—1644, will show how very beautiful they must formerly have been. They are only a few from the many examples which might be derived from the same source.

"103. Cochil, April the 6th. . . . There was many inscriptions of JESUS in capital letters on the roof of the church, and cherubims with crosses on their breasts, and a cross in the chancel—all which we left a warrant with the constable to destroy in 14 days.

"113. Dunwich, April the 9th, at Peter's Parish. Sixty-three cherubims, sixty at least of JESUS written in capital letters on the roof and forty superstitious pictures.

"115. Bramfield, April 9th. . . . The picture of CHRIST and twelve angels on the roof, and divers JESUS's in capital letters.

"124. Ufford, August the 31st. . . . Twelve cherubim on the roof of the chancel, and nigh a hundred JESUS-Maria in capital letters. . . . In the church (nave) there was on the roof above a hundred JESUS-Maria in great capital letters, and a crosier staff to be broken down in glass, and above twenty stars on the roof."

Dowsing's Journal is well worth inspection, as the number of "superstitious" pictures broken down, show to how great an extent the custom of adorning churches with paintings prevailed. Both subject and manner of treatment was to a great extent guided by conventional rules. Thus the Doom or Last Judgment was reserved to the chancel arch, S. Christopher and the patron saint for the door, the Baptism of Christ for the Baptistry, and scenes from the life of the Virgin or the patron saint, as well as detached figures about various parts of the church.

The Ecclesiologist for October, 1859, gives a very interesting account of some paintings, possibly the Seven works of Mercy, discovered in a church near Cambridge, which show with great distinctness the manner in which these subjects were treated. In the Church of Holy Trinity, Coventry, there is a very large painting of the doom over the chancel arch, which is considered as one of the finest in the kingdom; at Preston Church, Sussex, and at North Leigh, Oxon, are others, and very many examples might be added, did our business lie with pictorial subjects instead of decorative Polychrome. The practice of the art in the Middle Ages is curiously illustrated by the accounts of money paid for the decoration St. Stephen's Chapel, Westminster. This great work undertaken by Edward I. 1292—1294, and afterwards by Edward III. in 1350, when the Chapel had been rebuilt, gave a great and important impetus to art. Some of the items charged for are very amusing, it must however be remembered that in those days painters prepared their own materials, even to making brushes and pencils. Thus we have in Smith's "Antiquities of Westminster:"—

	£.	s.	d.
Master Hugh de S. Alban's, for half a pound of teynt for the painting of the said Chapel	0	2	0
To the same for one pound and a half of oker for the same painting	0	0	3
To the same for two small earthen jars to put the different colours in	0	0	1
. . . One pair of shears to cut the leaves of tin	0	0	2
Nineteen flagons of oil for painting of the Chapel, at 3s. 4d. per flagon	3	3	4
John Lambard, for two quarters of royal paper, for the painter's patrons (patterns)	0	1	8

	£	s.	d.
One pound of cotton to lay on the gold	0	0	10
Gilbert Pokerich for 153 peacocks and swan's feathers for the pencils of the painters	0	0	3
Simon de Lenne, for one pound and a half of hog's bristles for the brushes of the painter	0	0	2
(And the list of materials might easily be extended.)			

For all particulars as to the vehicles, systems and materials employed by the mediævalists, the reader cannot be referred to a more useful work than the Treatise of Cennino Cennini, which enters fully into all these subjects. This painter, the son of Andrea Cennini was, as he himself informs us, for twelve years pupil of Agnolo, son of Taddeo Gaddi, who in his turn was godson and pupil of Giotto. According to the calculation of his editor Tambroni, he must have been born somewhere about 1350, and as his Treatise was finished in 1437 it comprises the available knowledge of the most valuable period. Although properly, it relates more specially to pictorial art, yet from the very nature of the arts as then practised, and also from the discursive style in which it is written, it contains information which would in these days be thought to concern only the gilder, the decorator, or the colourman.

He commences with what may be styled a religious flourish of trumpets and invocation of various saints favourable to art, and then unhappily thinking it necessary, according to the then custom, to begin '*ab ovo*' with the Creation, enters into a labyrinth in which he and his readers get entangled and confused alike. The first book, professedly on drawing and design, may be said to contain every conceivable subject more or less con-

nected with art, from making a pen or cutting a crayon to the diet and religious and moral conversation of the student. To the former branch of subjects, we shall have frequent occasion to refer to in the practical part of this Manual. The second book treats of the preparation, grinding, and nature of colours, the media applicable to each, and also the making of pencils of minever and hog's hair. The third book treats of Fresco and Secco. The fourth book is very comprehensive, containing the whole art of oil-painting, as then known, preparation of panels, gilding, nimbus making and engraving on the gold, ending with receipts for casting moulds and taking impressions of seals. In spite of its quaintness and discursiveness of style, it would be hard to find a more valuable and practical treatise and compendium of art as practised in the Middle Ages, than the work of Cennino Cennini, and we shall have frequent occasion to refer to it in our description of materials and processes.

Of the decay of the art of decoration—its degradation to mere scene painting, its retirement before stone colour paint and pails of whitewash, and its recent revival, there is little need for us to speak, as we are taking the practical rather than the historical or theoretical view of the subject. It certainly seems sufficiently recognised and esteemed at the present day, nor does there seem much fear of its disuse, now that it has progressed beyond the region of whim, and been accepted as a natural instinct.

THE NATURE OF PIGMENTS.

There is no point more deserving the amateur decorator's attention, and perhaps none more neglected than the properties and nature of the pigments he employs. So long as a dry smooth absorbent base is attained, both amateurs and professionals alike, too often think that no further care is needed, and either from ignorance or wilful carelessness, employ pigments of the worst possible character, reaping their own reward in the speedy fugacity and ultimate destruction of their work. Unfortunately, a bad example is but too frequently set them by the practise of many artists, who sacrifice permanence for mere temporary effects, and employ lavishly delicate tints which for a time delight the eye, but all too surely ultimately fade, blacken or change to the destruction of the picture. It is to be regretted also that as a general rule the permanence of colours is in almost inverse ratio to their beauty, the solid grave ochres, umbers and siennas being durable, while the brilliant lakes, scarlets and greens quickly fade and fly. At the same time, however, we must bear in mind how greatly the science of the chemist has of late years aided the labour of the artist, in supplying him with pigments free from the bane of fugacity. Indeed, thanks to the chemical science, so greatly has the palette been extended by the addition of pigments, both permanent and brilliant, that it will be the artist's own fault alone if he employ fugitive tints in preference to those of more durable qualities. It should then be the decorator's

business to make himself well acquainted with the nature of the colours with which he has to deal, more especially it should be an absolute and invariable rule never to employ any pigment of the durability of which he is not sure. It was this thorough understanding of the qualities of their colours, added to a severe simplicity in their employment, which ensured to the artists of the Middle Ages the combined brilliance and durability of their paintings. And yet, while in the present day our chemical knowledge has developed and increased so marvellously, while all the matériel of the artist has been brought within the reach of the most moderate purse, and while the practise of the art has been freed from the atmosphere of mystery which once enveloped it, so great is the general ignorance of decorators, and so reckless their system, that there is scarcely any grounds for expecting the permanence of modern decoration. Though it would be easy to point out specimens of decorative work which have stood the lapse of four centuries with brilliance unimpaired, five or six years is very often sufficient to change, impair, and perhaps destroy modern adornment. When artists or professional decorators speak regrettingly of lost 'systems' or pigments enjoyed by the mediævalists and unattainable now, it would be far better were they to make the best use of existing materials and study their further developement. "Titian," says Haydon, "got his colours from the colour shops on the Rialto, as we get ours from Brown's; and if Apelles or Titian were living now, they would paint just as good works with our brushes and colours as with their own." Naturally, where the artist was his

own colourman, that is prepared his colours from the materials selected and purchased from the merchant, he would take every care that such preparation should be the best possible, knowing how far his fame depended upon it. We may also believe that, to a certain extent, religious motives may have directed the employment of the finest pigments on sacred art, "I give you this advice," says Cennini, "that you endeavour always to use fine gold and good colours, particularly in painting representations of our Lady. And if you say that a poor person cannot afford the expense, I answer, that if you work well (and give sufficient time to your works) and paint with good colours, you will acquire so much fame that from a poor person you will become a rich one; and your name will stand so high for using good colours, that if some masters receive a ducat for painting one figure, you will certainly be offered two, and your wishes will be fulfilled, according to the old proverb 'good work, good pay.' And even should you not be well paid, God and our Lady will reward your soul and body for it." So that the amateur decorator appears bound to employ good pigments, either from a religious or practical motive as his fancy or experience may suggest. In the present day when good artist-colourmen abound, and the aid of the chemist is called in to the birth of a new pigment, we could scarcely venture to recommend the amateur to manufacture his own colours. The excellence of their preparation, whether in oil, water or powder, he may generally take for granted, their *permanence* and eligibility should be ascertained by his own private study. If an artist chooses to employ

such colours as iodine scarlet, pearl white, or verdigris in decoration, he has only himself to thank when they turn black or fade; the fault is not with the colourman for supplying, but with the artist for using pigments radically vicious. For any deep and comprehensive inquiry into the natures of colours, we must refer the reader to that useful work Field's "Chromatography" where all particulars may be learnt. In the present chapter, we only aim at giving a few rough notes on the properties of those pigments most useful for decorative purposes, with the addition of the media most applicable to each. The colours really indispensable for decoration are very few, and happily those are mostly of good character for permanency. It should be carefully borne in mind, however, that the permanence of most pigments is influenced to a great degree by circumstances. Thus a colour which is highly eligible in Oil, may be doubtful in Distemper, and absolutely inadmissible in Fresco; and *vice versa*, many colours useful in Tempera do not admit Oil. The limited palette again of Fresco is owing to the presence of lime, which is destructive to vegetal colours, but has no influence upon the earths. So also one colour may be antagonistic to another, and render it fugitive in conjunction or juxtaposition, whereas separate, each may be regarded as permanent. But besides all these considerations, and putting aside the question of internal damp which *destroys all colours and all media* alike, the decorator must take into his calculations the adverse influences of *external* damp (from condensation of breath) and the action of light, oxygen, shade, sulphuretted hydrogen or foul air, and he will find,

perhaps somewhat to his confusion, that some pigments are entirely uninjured by one class of hostile chemical agents, but perish under the reverse, that some are proof against neither, and that others can defy both. In the words of Mr. Field, "The majority of pigments have a mediocrity of qualification, balancing their excellencies with their defects, and the number of good and eligible pigments overbalances those which ought in general to be rejected."

Aureolin. This new and very beautiful pigment possesses a rare combination of remarkable qualities that place it far above any other known brilliant yellow. It is light, vivid, and transparent. The lighter and fainter tints are at once clear and delicate, and admit the most subtle gradation of tone. Aureolin mixes advantageously with all other colours, and forms combinations of the utmost variety and value; the tints of Aureolin being of exceeding purity, whilst its hue is rich and vivid. It is absolutely and entirely permanent. Aureolin has been subjected to every variety of the severest test and trial which have demonstrated its powers of endurance, and shown that its distinctive characteristics are retained unimpaired under all possible conditions.

Cadmium Yellow. Sulphide of Cadmium. There are several tints of Cadmium Yellow manufactured. That called "deep" Cadmium is the most serviceable and is chiefly in use. It is a full, rich, golden yellow, not very transparent, but clear and bright, and of great power. It gives beautiful clear tints by admixture with white. It is the most richly toned yellow known. It may be classed among the permanent pigments; impure air or damp does

not affect the yellow of Cadmium. Until lately, owing to the great scarcity and dearness of the metal from which these yellows are obtained, they were little known. Cadmium is, however, now found more abundantly, and consequently the yellows have become proportionately cheap and plentiful.

Chrome Yellow. Chromate of Lead. The power and brilliancy of the various chromates of lead—lemon, pale, deep, and orange, have caused them to be much employed. Yet they are rank in tone, and are not to be depended upon for permanency. The lead base of the chromates is liable to blacken by foul air, and the lighter yellows have a tendency to become greenish in their hue. Of the chromates of lead, the Chrome Orange is the most durable and the least exceptionable. It is, however, liable to the changes of the lighter chromes, though in a less degree.

Yellow Ochre. There is a great variety of yellow earths falling under this name. They are found abundantly in most countries, and especially in our own. Their tints range from a bright, though not vivid, yellow, to deep low tones of brown yellow, which latter is known under the name of Brown Ochre. The finest kind of Yellow Ochre is that known as Oxford Ochre, and this is the kind chiefly used in painting. It is a most serviceable pigment in oil, fresco, and distemper, and it is not prejudicially affected by light, impure air, or other causes of deterioration and change.

Naples Yellow. Antimoniate of Lead. A light, warm, opaque yellow, formerly much used. It is, however, so liable to change by admixture with pigments that contain iron, such as the ochres, Prussian Blue, &c., and even by

contact with metallic iron, a steel palette knife, for instance, that its use is now but very limited. All the tints of Naples Yellow are readily and accurately imitated by admixture of deep Cadmium Yellow and white, and these are now employed to replace the untrustworthy tints of the Naples Yellow pigment.

Raw Sienna Earth. Also a native pigment; in many respects of great value. It has more transparency than the ochres, and it is equally permanent.

Burnt Sienna Earth is the raw sienna earth burnt, and is of a rich orange russet colour. By the operation of burning, it acquires warmth, transparency, and depth. It is a very durable and eligible pigment.

Vermilion. Sulphuret of Mercury. There are several varieties of this pigment, the orange, the pale, the deep, and a purplish tint, known as Chinese Vermilion—the latter now but little used. The difference of tint between the several kinds is but slight. The pale and the deep vermilion are those mostly employed in decorative painting. Neither light, time, nor foul air, effect sensible change in true vermilion. It is frequently adulterated with red lead and other inferior pigments; but when unmixed and pure, vermilion is permanent, and eligible in oil, distemper and fresco.

Indian Red. A native earth containing a large proportion of peroxide of iron. It varies considerably in its hues, and is valued for the clearness and soft lakey tone of its tints. It is very permanent, and is an eligible pigment in oil, distemper and fresco.

Light Red, calcined yellow ochre. The brilliancy of the red being in proportion to the clearness and purity of the

ochre employed. Mixed with white, light red gives a beautiful range of tints of pale and deep flesh colour.

Venetian Red. Prepared from calcined sulphate of iron; somewhat similar to light red in tint, but more powerful, and of a more scarlet hue. Very permanent, and has all the qualities of good ochres.

There is a class of red pigments consisting of native earths, such as red ochre, Armenian bole, red chalk, &c. These red earths abound in England. They are all useful and permanent pigments of more or less value, according to the body they possess and to the brightness and purity of their tints.

With these may be named the Colcothars mostly obtained, like Venetian red, by the calcination of sulphate of iron. They vary in tint, according to the process of manufacture, from full, low toned red to brown red and purple brown. They furnish very durable colours which unite well with all other pigments. The whole of the iron pigments give very permanent, sober tints.

Madder Lake. Of all the transparent red lakes, and they are very numerous, those obtained from the madder root possess the most desirable qualities. They are brilliant, transparent, and above all, permanent. They do not change by the action of light or impure air, and they are not injuriously affected by mixture with other pigments.

An extraordinary variety of lakes of different hues, all permanent, are obtained from the madder root in addition to the red lakes. They are known by the names of flesh madder, Rubens' madder, madder purple, madder brown, &c. Of these, the two latter are the most important.

The use of madder purple, chiefly on account of its high price, is almost entirely confined to water-colour drawings. The madder brown is very much cheaper and is more generally employed. It is a powerful marrone brown of great beauty, depth, and transparency.

Lake, crimson, scarlet and purple. The lakes obtained from cochineal are all more or less affected by strong light, which weakens their tints, and in time deprives them of colour. Their extreme beauty and transparency, however, causes them to be extensively employed in all kinds of ornamental painting where permanence is not absolutely demanded. The deeper tints, the purples, are the most permanent.

A low toned purple lake is obtained from lac, which is tolerably permanent. Red lakes are also prepared from a variety of dye woods which yield red tinctures. These are, without any exception, fugitive.

Genuine Ultramarine—the most celebrated of all pigments, ancient and modern. A most exquisitely beautiful blue, varying from the utmost depths of shadow to the highest brilliancy of light and colour. Transparent in all its shades, and pure in its tints, so eminently permanent that it remains perfectly unchanged in the oldest paintings. Unfortunately, the great expense of fine genuine ultramarine forbids its extensive employment in decorative painting.

French Ultramarine. Though wanting the high merits of genuine ultramarine in brilliancy and purity, the imitation pigments, known as French Ultramarines, effectively replace the genuine colour for almost all purposes. The imitation ultramarines possess in a

subdued degree, the characteristics and qualities of the genuine. They are brilliant, transparent, powerful and permanent. They are now made, by various processes, of different degrees of excellence, at prices varying with their quality, and of tints ranging from pale to deep.

Cobalt Blue, a clear, light, brilliant azure, of great value where clear light blue tints are required. These tints approach in brilliancy the paler tones of ultramarine. Cobalt Blue has not, however, the transparency and depth of ultramarine. This pigment may be considered to be permanent, the slight changes to which it is liable affecting it but rarely.

Smalt is an impure vitreous Cobalt Blue, varying much in its qualities. The finer kinds are occasionally used in decorative work. It is almost always of a coarse, gritty texture and of little body. Smalt is, on this account, sometimes applied to work by strewing the dry powdered pigment upon a flat ground of white or blue oil paint immediately after the latter is laid on, whilst it yet remains wet.

Prussian Blue. Cyanide of Iron. A deep and powerful blue colour of great transparency, affording tints of great beauty with white lead. The extraordinary strength of this pigment renders it of important use in painting deep blues, its transparency giving force to its depth. It is also valuable in compounding purples with lakes, &c., and its addition adds considerably to the intensity of black. Prussian Blue, under favourable circumstances, has considerable permanence, that is, in the absence of much damp or of impure air.

Antwerp Blue is a lighter coloured, and somewhat

weaker Prussian Blue, having more aluminous base to which its paler tint is owing. Otherwise, it is similar in its qualities to Prussian Blue, except in wanting its extreme depth.

Indigo is extremely powerful and transparent, but is not so bright as Prussian Blue, to which it is in all respects inferior. Its tints with white lead are all fugitive.

Oxide of Chromium is, as its name expresses, an oxide of the metal Chromium. There are at present several varieties in use. The kind hitherto best known is the opaque oxide, such as is employed in enamel work, and is the fine green observed on superior porcelain. The Oxide of Chromium is perfectly unchangeable. Neither light, impure air of any kind, chemical reagents, or even the most powerful heat, affects its colour. It is the most permanent pigment known. It is a sober, cold green of wonderful power, extremely agreeable to the eye, and its tints with white are peculiarly delicate and pleasing.

Viridian, Veronese Green, Transparent Oxide of Chromium. Under these, and indeed a variety of other names, are manufactured oxides of chromium, differing from the last named opaque oxide in the very important point of being more or less transparent. By far the most brilliant and transparent is the colour known under the name of *Viridian*. It is wonderfully rich and brilliant, and far surpasses all the other kinds in transparency, depth, and fullness of tint. Some of the lower qualities of the transparent oxides of chromium are of a dull tone, tending to dark olive, between which and the highest of the scale, the splendid *Viridian*, are many qualities

differing in various degrees of power, clearness, brightness and transparency. All these various qualities are equally permanent with the opaque green, excepting that they blacken when subjected to great heat.

Chrome Greens. With the foregoing genuine oxides of chromium must not be confounded the so-called "chrome greens" of commerce. These are merely admixtures of Chrome Yellow and Prussian Blue. They are manufactured of an immense variety of tints, under almost as great a variety of names. They are all extremely fugitive, and applicable only to the commonest exterior work of house painting, &c. The variety of tint and great cheapness of these mixed pigments occasions an enormous consumption of them for all common purposes.

Emerald Green. Arsenite of Copper. The most vivid of the tribe of greens, rather opaque and powerfully reflective of light. Its vivid hue is almost beyond the scale of other bright pigments. Care is consequently required to place Emerald Green so that it may be in harmony with the hues around it. There exist many varieties of this green, under different names, one is called Scheele's Green, another Schweinfurt Green. It is somewhat singular that being copper colours, they are, nevertheless, permanent. They are scarcely at all affected by damp and impure air, and they are in all respects more eligible colours than the other descriptions of copper greens which, under various names, abound in commerce.

White Lead. The German manufacture, known as Cremnitz White, is the most brilliant lead white with which we are acquainted. It is of body and brightness superior to the lead whites of English make. This superiority is

considered to be owing to the greater purity of the metallic lead from which the white is obtained. We manufacture, however, in England lead whites of good qualities for general purposes.

Zinc White, oxide of zinc, is manufactured on a very extensive scale, and is largely used for painting. It does not possess much body, that is, covering property, in oil. It is, however, perfectly durable in oil and water.

Sulphate of Barytes and various whites with lime bases, as the sulphate and carbonate, are used in distemper, fresco, and other processes of water-colour painting. The white pigments are an exceedingly numerous class. A perfectly unexceptionable white pigment, adapted to general purposes is, however, yet to be desired. The white earths are destitute of body in oil and varnish, and metallic whites of the best body are not permanent in water.

Browns. Of these we have abundance of excellent quality adapted to every kind of painting. The Turkey and English raw and burnt Umbers afford us pigments of great body, and the bituminous earths, Vandyke Brown, Cassel and Cologne earths, &c., give us rich transparent tints that leave nothing to be desired.

Blacks. Black pigments are very numerous; little, however, need be here said of them. Ivory Black supplies a rich, full, silky tint, and Lamp Black a tint dense and solid. These are sufficient for every purpose.

It will be seen by the above list and its accompanying remarks, that the resources of the artist or decorator who makes permanence a primary consideration are really quite sufficient for all ordinary purposes. From their very

nature no colours are absolutely permanent, because "all natural substances are changeable." The utmost, therefore, that the decorator can do is to consider under what circumstances his work will have to be executed and exist, as damp, excess of light or shade, foul air, &c., and suit his palette accordingly. Time, of course, effects all pigments more or less, its action resembling that of heat, which may be taken as a safe test in its effects; but some colours will be found almost unchanged even after centuries have elapsed. As a general rule, the simpler the system of colouring employed, the more prospect of its enduring, while in the combination of two or more colours to form a tint, the greatest care should be taken to see they are homogeneous and on similar bases. A little study, and attention, and reflection is all that is needed to guide the amateur. It would scarcely be saying too much to add that an epitome of nearly all that it is desirable to avoid, may be learnt from the practice of the lower class of professional decorators, who appear to combine the maximum of ignorance with the minimum of common sense, and while boasting of rules of 'taste' and composition gleaned at random from grammars of ornament and the like, are in most cases absolutely destitute of an eye for colour, in many, colour blind.

OIL AND TEMPERA.

For many reasons, it will be seen that for decorative purposes the choice lies between an Oil and a Tempera medium.

They are both cheap, facile in application, needing but very simple preparatory grounding, admit a greater number of pigments than other vehicles, and can be used upon any surface at pleasure. They neither require exceptional surface like Fresco, Encaustic and Stereochrome, nor is there any limit to the amount of work which may be executed in a day. Also they are free from the necessity of fixing as in water-glass, or fusing by heat as Encaustic, yielding, as they may be said to do both to these and also to Fresco in the point of absolute permanency; yet as, under properly favourable conditions, a duration of two or three hundred years may safely be expected for both Oil and Distemper, they cannot be said to be dangerous or fugitive vehicles. '*Under properly favourable circumstances*'—that is that the situation be reasonably dry, the edifice sufficiently drained and ventilated, and the stone or plaster surface free from damp. If these be not secured, no medium can be expected to behave in a satisfactory manner.

The respective merits, however, of Tempera and Oil are opposed; the former being best able to cope with the natural dampness of stone or plaster, *i.e.*, internal damp, the latter possessing most power against the damp proceeding from without. The reason of this appears to be as follows. Stone is in a greater or lesser degree of an essentially damp and cold nature. The minute pores and holes which permeate its substance, form so many little spiracles or breathing places, which give passage to the damp to rise to the surface. Although by careful choice of stone, by proper precautions in building, draining, and ventilation, a stone wall may always be rendered suffi-

ciently serviceable for decorative purposes, yet to a certain degree damp must always exist. Now when successive coats of oil-paint have been applied to the inner surface of a stone or plaster wall, a liquid has been used repugnant and contrary to the nature of the internal damp. The air holes are stopped up, and as the stone still desires to breathe through, a battle ensues between the water and the oil which after a time ends in the latter being pushed off from within, and detached in minute scales or powder.

Hence the defect of an oily vehicle against internal damp. At the same time as each grain and particle of colour is 'locked up' in the stout body of oil, it is effectually preserved against external damp, which cannot push or drive it into the wall, and hence glides off from its surface harmlessly.

Now in Tempera the reverse holds good. The thinness of the aqueous vehicle prevents the stone pores being stopped up, and allows the passage of air freely, thus causing no internal warfare, while on the other hand, that very tenuity of body affords little or no protection against the attack of damp from without.

Added to this, it may be said that the nature of the size employed, being animal, must after a time suffer decay and liberate the imprisoned colour. Still, under ordinary circumstances, the time required to effect these destructive changes is so extended, that with proper precautions the amateur may regard both his Distemper and Oil vehicles as quite sufficient for his purposes, sparing himself much trouble about the various mixtures—nostrums which from time to time arise. In two respects the balance will be in favour of Distemper, as it possesses the property of

drying both flat, *i.e.* unshining, and quick, the former of which is essential, the latter always desirable in decoration.

For convenience, therefore, we shall treat of these two media in one chapter, giving such special instruction as may be necessary.

1. *The preparation of walls for commencing the decoration of a church or other building.*—The first thing to be done is to have some competent opinion as to the fitness of the walls, plaster, and stone-work for receiving colour. To this end it will be best to ask the advice of some builder, who, on knowing the nature of the soil, materials employed, drainage, and the time which has elapsed since building, can give a sufficient decision as to the safety or danger of colouring. As a general rule, however, it may be observed that ashlar walls, being composed of free stones as they come from the quarry, are likely to be bad, as the dampness of the atmosphere condensing on the wall in warm weather makes them wet. Nor are rubble walls any better. Perhaps brick, well plastered, is the best surface attainable for all cases; whether stone or plaster be used, some period should be allowed to elapse between building and decoration. In plaster more particularly, as the kinds vary much, Parian requiring only three or four days, mastic (which is used in oil) taking a fortnight or more, while the ordinary plaster should not be touched for six or eight weeks.

2. *To prepare a brick surface unplastered for decoration.*—Melt down a sufficient quantity of Young's patent size in a saucepan or earthen pot, and add twice its bulk of water. Having dusted the walls down, brush them well

with this solution, using a large spreading brush, and taking care to cover the ground well.

This will be sufficient preparation both for Oil and Tempera, when the brickwork is to be retained as a ground. In the same way, stone may be prepared for colouring, the delicate varied natural white of the stone being infinitely preferable to any white ground in Distemper or Oil.

3. *To prepare stone for colouring and gilding in oil, retaining it as a ground.*—Melt in a pipkin, or clean paint pot, one ounce of virgin white wax, adding sufficient turpentine to reduce it to the consistency of milk; add to this French oil varnish *ad libitum*, to make your wash flow easily, and a little *sacrum* (prepared sugar of lead) to cause it to dry flat. Apply warm with a large brush. This will very slightly darken the tint of the stone, and will form a good ground for painting in oil.

4. *Preparation of walls in Tempera.*—When it is wished to colour a wall, not retaining the plaster or stone as a ground, the following order must be observed. First mend any broken parts with a mixture of putty and plaster of Paris neatly put on with a spatula or palette knife, and smoothed down. Then brush over the walls with a size, composed of 1lb of good glue dissolved in one gallon of hot water, thickened with some red lead, or else with Young's patent size as described before. Give this sufficient time to dry. Now proceed to make your ground colour, which we will suppose to be what is usually called vellum tint, as follows:

In a large double sized paint pot, put 3lbs of gilder's whiting, cover it with water, and let it be until it be per-

fectly broken up and saturated, and the effervescence has subsided. Then pour off the water and stir with a thick stick, until the mass has attained the consistency of dough. Melt Young's patent size not diluted, and pour upon the whiting, stirring well up, and then straining while warm to free from impurities. Let this stand several days in a cool place until it is formed into a weak trembling jelly, so as to be worked with ease with a stiff brush. Before the size is added, it may be stained to any tint which is desired, by the addition of the proper colour, ground in water. It should be observed that all colours in distemper dry lighter than when first applied, so that the only way to secure the requisite tint is to make experiments upon a piece of paper or card, until the proper tint is reached. The colour must then be applied to the walls in its cold and jellied state.

For this purpose, use a large hog's hair brush, and work with decision and freedom, taking care not to retouch any portion of the work, but to cover the ground well as you proceed. The wall should be divided by your eye into squares, advancing from one to another in regular succession and, of course, beginning from above. Unless for some special purpose, your ground should never be pure white, but be stained, however little, with black, blue, ochre or chrome yellow to take off the raw appearance; where a coloured ground is needed, proceed in the same way as above described, commencing with a larger or smaller quantity of whiting, and tempering it in the colour to the degree required.

5. *Preparation of walls in oil.*—First give a coat of glue size as in Tempera. Follow this up with two

or three thin coats of boiled linseed oil, with some red lead and litharge added. This must be applied to the wall quite warm to prevent its scaling off. After this, the wall should be well rubbed down with glass and sand paper, and dusted if a very fair finish is required. For the second coat in vellum tint, grind white lead in equal parts of raw linseed oil and turpentine, adding some litharge as dryers. Heighten your colour to the tint desired with ochre or raw sienna, and apply with a large soft hog's hair brush. The third coat will be made and applied in the same way. In two or three days the third coat will be ready to receive what is technically called its flatting, which should be put on before the last coat of oil paint has dried quite hard, as otherwise it will look uneven and streaky. For vellum tint, white lead, tinged with ochre, &c., to the desired tint, should be ground in spirits of turpentine and a little oil and dryers until quite thick and viscid. It may then be strained through a coarse cloth and thinned to the necessary degree, taking care to match the tint from any remnant of the last coat of oil. In applying it, observe the following directions. If the wall or surface to be flattened be too high to be washed conveniently, a small scaffold should be fixed along it so that any one standing upon it can reach with ease to the top. Having the colour properly prepared and using a large soft spreading brush, commence at the bottom and work upwards to the scaffold, taking about a foot or a foot and a half at a time, then cross your work horizontally and finish by "laying off" your work from the bottom upwards, and then from the top downwards. As

you finish each strip or portion of your work, some one on the scaffold must commence where you left off and carry the work upwards, observing exactly the same directions, so that the two workers may follow each other up and gradually complete the work.

6. *To mix colours for ordinary use in oil.*—All colours for use in decoration should dry flat and unshining, for this purpose various substances called technically “dryers” require to be mixed with them, care being taken not to mix too much, as this exactly defeats the desired end. The principal dryers are the acetate or sugar of lead, litharge, sulphate of zinc or white vitriol, and japanner’s gold size which is really oil boiled upon litharge. The amateur should observe that some of these dryers act injuriously upon certain colours, for instance, oxides of lead upon such light and tender colours as lakes, &c., and also that a mixture of two dryers as sugar of lead and vitriol, although sometimes recommended, is bad for chemical reasons. The colours should be ground in oil, the necessary amount of dryers added, and then the mass thinned with turpentine to the consistency required.

The amateur should take great care always to clean the stone after any colour has been ground by rubbing, with a cloth and fine sand, and afterwards wiping down with turpentine. Brushes and pencils in oil should also be cleaned after use, first in turpentine and then afterwards in warm water and soap. They should be well wiped and then placed on a sloping board, one end resting in cold water which will keep them supple. It should be observed, however, that the pencil must not on any account rest on its point as this invariably ruins it. Large

tools, after washing, are best left to soak in cold water.

In Distemper, it is as well to have a large pot of whitening prepared as before described, and then to temper with it the other colours, red, blues, greens, &c., until the desired tint is reached. For permanent colours and combinations the reader is referred to the table of pigments.

LIST OF MATERIALS REQUISITE FOR DECORATION IN OIL
OR TEMPERA.

1. Powder colours as necessary.
2. Boiled linseed oil.
3. Oil of turpentine.
4. Japanner's gold size.
5. Oil gold size.
6. Knotting varnish.
7. Patent size.
8. Glazed earthen pots, various sizes.
9. A marble slab and muller.
10. Palette and knife.
11. Mahl stick.
12. Hog's hair tools, various sizes.
13. Sable pencils, &c., &c.
14. Coarse sponge.
15. Square of glass for stencils.
16. Paper for ditto and patterns.
17. Muslin for straining colours.
18. Gilder's cushion knife and tip.
19. Cotton wool.
20. **T** square and straight edge.
21. Two foot rule.
22. String and lead weight.
23. Large wooden compasses.
24. Putty for mending cracks, &c.

25. Powdered charcoal and sticks of ditto.
 - 26 Needle set in wooden handle for making pounces.
 27. Tin dippers for holding turpentine, oil, size, &c.
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PRACTICAL HINTS.

In beginning any large decorative work, the first thing to be seen to is, of course, the architect's design. This will ordinarily consist of a sketch of the general effect drawn to a certain scale, and details full size of the various portions composing the whole—all more or less coloured. Should the amateur prefer making his own design, he will proceed in a similar way, taking particular care to secure accurate figured dimensions and sections of mouldings, &c. Where it is wished to employ some pattern which differs in size from the space it is to occupy, recourse must be had to a method called 'squaring,' if the amateur be not possessed of sufficient powers of draughtsmanship to effect it otherwise. The *modus operandi* is very simple. On the pattern to be copied, strike perpendicular and horizontal lines through the centre. Enclose the pattern in an exact square, and subdivide it into smaller squares, as many as may be convenient, working from your central lines. Then lightly number each square 1 2 3, &c.

Treat the space which you desire your pattern to occupy in a similar manner, drawing your squares larger or smaller as necessary, but retaining the same number as your copy. Then beginning from the top, draw square

by square what you see in the corresponding squares of your copy, and you will find no difficulty in obtaining an exact facsimile, larger or smaller according to the proportion of your squares. The work should finally be touched and outlined with a bold free hand, to remove the 'patchy' and 'stiff' appearance it otherwise might present.

In making full size details from the sketch, it is, of course, only necessary to draw portions sufficiently large to work from. Thus in a running border, one pattern and a half, or two patterns are enough to repeat from. In a large diaper, or powdering, one pattern complete with the guide lines and central points of its repetition will suffice. It is impossible to be too careful in setting out diapers and patterns which repeat; an error of the eighth of an inch, insignificant as it appears at first, will, by repetition put a whole wall out of drawing and entirely spoil the work. The mode of setting out a diaper, or pattern, which is to cover a large wall space, is as follows. Commencing at the top, measure the space accurately in a horizontal direction with a rule, and thus determine the centre which you mark with a spot. Procure a piece of fine twine, long enough to reach the bottom, and having tied a plumb or heavy leaden weight flat on one side to the end, rub it all along with some finely powdered charcoal—if the ground be dark, chalk—and hold it firmly to the central spot. Let the weight swing, until it finally settles down and draws the twine perpendicularly. Some one then must hold it carefully in that position, and having drawn it "taut," give it a gentle snap, upon which it will leave

a perpendicular mark upon the wall. To get a line at right angles to this, divide your perpendicular and ascertain its centre. Then place one leg of the compasses on this central spot, and mark two points upon the perpendicular. From each point, upper and lower successively, describe a parabola with the compasses so as to cut each other. A line drawn through the centre, and the points of intersection will be horizontal, and at right angles to your perpendicular. Having secured these two important lines, you should next mark off with the compasses the distance from centre to centre of your repeating diaper, and proceed to divide the wall into squares with your chalk or charcoal lines, each point of intersection representing the centre of a pattern.

It should be borne in mind that every pattern must be started in theory from its centre, so as to insure uniformity of extension. Patterns to be painted by hand are usually transferred to the wall by the processes of pouncing or tracing. The former is effected thus: the pattern is carefully drawn upon paper, not too thick, which should then be placed on a soft deal board or table covered with a piece of carpet. The outlines of the pattern must next be pricked through with a fine pointed needle, keeping the holes very close together. Certain guide marks should be made at the edges of the pounce to secure its being placed in the proper position, and then being held firmly against the wall where the pattern is to go, chalk, for a dark ground, and charcoal or Indian red for a light, should be dusted through it in a little muslin bag, thus leaving an exact transcript of the pattern.

Before using the pounce, it is as well to pass it before the flame of a candle, or gas burner, as otherwise the holes are apt to get choked up. In tracing, it is simply necessary to rub the back of the pattern with any powder colour, as Indian red, &c., and apply it to the wall, tracing over the outlines with a style or hard-pointed pencil, and so leaving an impression on the wall. A very efficacious method of transferring on a smooth white surface, as paper, card, wood, is to make a careful tracing of the pattern with a BB pencil on oiled paper, and then having reversed it in its position, to rub it with the back of a knife or paper cutter, which leaves an impression in black lead, and may be repeated several times.

Where it is not wished to paint the patterns in by hand, a process called stencilling is employed. The pattern is carefully traced or drawn upon a piece of cartridge paper, which has been painted over with knotting varnish on one side to make it stiff; a special quality of tinfoil also is sold, very well adapted for this purpose. The pattern to be painted must then be cut out with a sharp pen-knife, the pattern being laid on a thick sheet of glass for this purpose, and sufficient little ties being left to hold it all together. The stencil plate is held up in its proper position on the wall, or elsewhere, and the design brushed through with either a proper stencil brush or a hog's hair tool tied round with thread, so as to make it short and stiff. The colour should be mixed very stiff so as not to run, and should be put on with a very dry brush which has first been dabbed upon the palette to remove superfluous paint. The stencil plate should be

frequently cleaned with a soft cloth and a little turpentine, and the ties finally painted in and rough edges corrected. Of course in a pattern of many colours there will be a separate stencil for each. Each plate should have its guiding lines and marks that they may respectively tally and fit correctly.

Two points, simple in themselves, require special care, the execution of the black or other line which generally edges and completes a pattern, and the drawing straight lines.

Both should be done with a long hair sable pencil springing and elastic, and well filled with colour. This will at first be troublesome to use, but after a little while the hand grows accustomed to it. Curves must be worked with a bold and free hand, while straight lines of any length are best *ruled* with a straight edge, using the sable brush like a drawing pen or cedar pencil.

It will be found in practice that all decorative work may be resolved into stencilling, painting and gilding. The manner of setting out, of course, is the same in every case, however varied the patterns or designs may be. The same rules are applicable to every portion of a building to which decorative painting has to be applied; roof, walls, mouldings, carving, and in every case the amateur will proceed alike. First preparing his ground, whether wood, stone or plaster, in Tempera or Oil as he prefers, according to the instructions before given; then commencing from the roof and working downwards, setting out his general design, and either stencilling or hand painting the details as time and inclination direct, leaving the gilding of each portion as the last operation.

It would be easy to multiply directions and instructions *ad libitum*, but having taught the amateur to prepare his ground, mix his colours, make such materials as can well be made by unprofessionals, to gild and to employ the various little processes and 'mysteries' of the art, all else appears superfluous and unnecessary. For this reason we make no mention of varnishing, graining, imitation of marbles, wood, &c., which do not properly belong to the art of Mural Decoration, but form a branch of house painting.

STEREOCHROME, OR WATER-GLASS.

Although for reasons we shall state, Stereochrome appears more suitable for pictorial than decorative art, yet this little Treatise would scarcely be complete, without some mention of this new and important method now engaging the attention of our first artists. There certainly seem sufficient chemical reasons for regarding it as the most durable system yet invented, and though the boast of German Artists, that pictures executed in Stereochrome are absolutely indestructible by fire or water, may be an amiable exaggeration, yet the fact that twenty years have been ineffectual to damage or change paintings, in some cases actually exposed to the open air, must be a very high testimony to its durable nature, as compared with Fresco, Oil and Distemper. The extreme simplicity of the medium and the whole process from first to last, is another favourable characteristic, while for its effects in the hands of true

artists we need only refer our readers to those noble pictures, the "Meeting of Wellington and Blucher" by Mr. Maclise, and the "Moses" of Mr. Herbert in the Houses of Parliament.

As we have before said, Stereochrome belongs to the first of the two great divisions of painting, that in which an aqueous vehicle is employed. It differs, however, from Fresco, Distemper, and what we commonly style 'water-colour,' inasmuch as in these the water vehicle is tempered respectively with lime, size and various gums, whilst in Stereochrome the powder colours are applied with pure *distilled water alone*, entirely free from other admixture. For this reason, as Mr. Maclise justly observes, it is the only method to which the term *aquarelle*, or water-colour, can be legitimately applied, and certainly thus far is the simplest of any.

It will naturally then be asked, for what reason it is styled water-glass. The answer is plain. In most other systems the act of applying colour in a liquid form to any surface of itself, binds, and fixes it there as soon as dry, from the more or less glutinous character of the vehicle. In Fresco, too, where the colours are applied to wet plaster containing lime, each grain of colour, becoming incorporated with the lime and locked up in it by the union with the carbonic acid of the atmosphere, is hardened into a non-absorbent and impenetrable surface. But in water-glass, the colours when first put on the wall could be easily dusted or blown off again, and their fixation is effected by the after process of sprinkling them with a fine shower of water-glass, or soluble alkaline silicate diluted with water, which is sucked in by the plaster ground,

itself containing silica, until the painting is incorporated into the wall itself and indelibly fixed. For the chemical reasons which specially prove the durable character of this fixation, we cannot do better than to quote the words of Mr. Maclise, who must be regarded as the authority *par excellence* on this Art. He says, "from what information I have gathered, by aid of books and conversation, I have formed the opinion that between the stereochromic and ceramic arts there exists a close analogy; while the art of fresco is not assimilated to either, except in a very remote degree: The fixation of pigments by water-glass on a plaster wall, appears due to much the same circumstances, as that whereby the fixity of colours on an article of pottery is effected. In both these operations, it is owing to the presence of silica (quartz) in the materials of the ground-work, that the painting can be rendered permanently indissoluble, and because this substance being capable of fusion at a certain degree of temperature, involves while cooling down to a state of solidity, the water of the colours laid in contact with itself.

"Without presuming to explain the process of Stereochromy more exactly than what my limited knowledge of the chemical facts will allow me, I should say that what the slab or other form of potter's clay is to the ceramic painter, the plaster wall is to the stereochromic painter; in both materials, the substance called silica exists, and this is painted upon directly where it lies at the surface. But while in the process of baking the article of pottery the silica in it becomes fused by heat, and at the time the pigments become incorporated in the silica, and all together afterwards set fixedly on cooling, a

similar result cannot be obtained for the Stereochromic painting, because of the inadmissability, or rather, practical impossibility of subjecting the wall to the influence of fire. If such were conveniently possible, the result would of course be the same. It is therefore upon the happy discovery that silica, rendered soluble by boiling it in an alkali, such as potash, soda or lime, can in that state be infused into the wall through its facial painting, and so render the latter fixed, that the Art of Stereochrome mainly depends.

“This art is new to Mural Painting, but the chemical fact is of long standing. Soluble alkaline silicate (water-glass) is but ordinary glass in a different form. Both are compounds of the same materials, and in the same proportions or very nearly so ; and, in fact, the very plaster covering on which the painting is to be made and set is, in itself, (as the chemist attests) a similar compound, but one in a different state. Quartz sand which forms the base of the plaster, is silica ; the alkali, (soda, potash or lime) in chemical union with quartz represents glass ; therefore the plaster formed of quartz, sand and lime is of the same matter as glass, the only difference between them being due to a chemical union of the ingredients of the glass, while those of the plaster only hold together united by virtue of the common law of cohesive attraction. It would appear therefore that between the plaster and the soluble glass there subsists a natural appetency. The one is desired by the other, the plaster thirsts and drinks into its multitudinous pores its vitreous beverage. The similar matters cohere as things physically suited for union, and upon this fact

the Art of Stereochromy is based and therefore will endure."

It must be evident, however, from the above remarks, that the necessity of a plaster basis or ground for painting upon to which Stereochrome owes its quality of durability, very much impairs its utility for mere decorative purposes. The only vehicles which can be regarded as thoroughly useful for decoration are those which can be applied to all surfaces alike, when properly grounded with oil or size. But stone, wood, and iron are equally excluded from Stereochrome, from the want of a siliceous ground or base, while to apply a plaster surface or coating to these would, in most cases, be impracticable. It certainly appears possible that by saturating any of these surfaces with successive coats of water-glass diluted, a sufficient siliceous surface would be produced to receive the pigments and after-fixing solution, but then putting aside the question of the durability of this method, it is evident that in very many positions requiring decorative treatment, such as mouldings, deeply recessed carving, &c., it would present very great and serious difficulties. Although, therefore, the mingling of two or more systems of painting in the same work is one never to be recommended, if Stereochrome is to be used for decorative purposes, it should be reserved for such large surfaces as are capable of receiving the plaster intonaco, while flatted oil, or better, Distemper should be employed for the completion of such positions not so capable.

The best ground for Stereochromic painting appears to be one formed of three coats of mortar. The two first should be of rich lime and river sand, in the

proportion of one part lime to three of sand, the last or intonaco, which is to be the immediate recipient of the painting, of the same relative proportions, but using fine silicious sand. This should be *hand-floated* with a proper wooden float, not trowelled as is the case in Fresco, inasmuch as this would render it too smooth and not sufficiently absorbent. Two things, also, must be borne in mind in laying this ground—uniform treatment in floating the intonaco is of high importance, as any irregularity of surface would very easily show through and produce an unpleasant effect in the painting. The colours cannot be safely loaded with so slight a vehicle as pure water without danger to their peeling and falling off. And again, though any special roughness of surface is not absolutely necessary to the success of the painting, it can be attained at the artist's pleasure by employing a coarser or finer sand. Portland Cement and fine sand in the proportion of one of the former to three of the latter may be employed, but from its dark colour is not advisable, save under special conditions of light and shade. In all cases the intonaco should not be more than the tenth of an inch thick.

The *modus operandi* is very simple. A portion of the intonaco is to be wetted with a solution of lime water by the aid of a large brush, and the painting commenced while wet. The colours are simply tempered with distilled water to about the same consistency, and applied as in Distemper or Fresco. The operations of glazing, hatching and stippling are all admissible in Stereochrome. When perfectly dry, next day it may be fixed with a solution of *kali*, water-glass, in the proportion of one

part water-glass and two of pure water, but on a ground of cement, two of water-glass to one of water. This is sprinkled or applied by means of a syringe, specially constructed for the purpose, and differing from the ordinary type by possessing a perforated flat nozzle, diffusing a broad shower of liquid, and also a glass bottle or reservoir for containing the diluted water-glass and supplying the syringe. Care should be taken not to use the solution too thick for fear of producing a shiny surface. It is better therefore to employ a diluted solution several times, until fixation is accomplished. Under ordinary circumstances, sixty square feet would require three quarts of solution to fix it, but these proportions will be found to vary according to the absorbency of the ground.

With the exception of lime, for which zinc white is substituted, all colours employed in Fresco are equally applicable in Stereochrome.

SPIRIT FRESCO.

It is owing to the courtesy of a well known amateur in art, Mr. T. Gambier Parry, that the author is enabled to lay before his readers a detailed account of the new medium of which that gentleman may be regarded as the introducer. It was first brought before public notice in an article in the 'Ecclesiologist' for March, 1863, and has since been advocated on various occasions by its inventor. It is very doubtful, however, whether it is as much known in the artistic world as it deserves, and we

make no apology, therefore, for availing ourselves of the present opportunity of describing it—such description being grounded by permission on the article referred to, supplemented from various sources. At the same time, it must be borne in mind that time is the only infallible test of the new media and systems of painting which are presented to us, and that until a strong *chemical* reason can be shown for the expected durability of any medium, the system employing it must be considered to a certain extent experimental.

Mr. Parry commences his observations by remarking that *damp* is the great enemy of wall painting, whether it be internal in the stone, or external, as damp of atmosphere or from the condensation of the breath of assemblies of people. And yet continually, both artist and decorator have to work under these unfavourable circumstances—to paint with the inward certainty that a few months may see the fading, a few years certainly must see the destruction of their work. Of the folly of painting in an incurably damp situation, upon new and insufficiently prepared surfaces we have elsewhere spoken, and shown how very short-sighted is the spirit of economy which hurries the artist or decorator over his work, or forces him to employ unsatisfactory methods to obtain, at best, a transitory effect. But we may have “a dry wall and a damp atmosphere, how shall we then deal with them?” asks Mr. Parry. He then reviews the various systems in existence, Fresco, Tempera, Oil, Encaustic and Stereochrome, mentioning what appear to him the chief objections to each. With these, we confess, we do not always agree, although Fresco, Encaus-

tic and Stereochrome we have elsewhere dismissed as unsuitable for mere decorative work from their special requirements of a particular ground or for other reasons.

The fatal objections to Fresco appear to be its inability to resist internal damp, and its very doubtful durability against the continued action of a damp atmosphere. Add to this, the necessity of extreme rapidity in execution, which, however desirable as inducing breadth of effect in figure painting, is much otherwise in decoration, the limited number of colours permissible, the requirement of a wet plaster ground and the difficulty of alteration, and you certainly have a medium almost impossible for the decorator, and as Mr. Parry suggests, ill adapted to the artist.

Tempera is dismissed as perishable. Pictures in the middle ages painted in Tempera were afterwards varnished, hence their bright tints now. And for wall paintings, it is most probable that wax was embodied into the composition of the Tempera vehicle, or at least that a colourless wash of diluted wax was glazed over the painting. It is hard to see how otherwise the Tempera vehicle should have withstood the repeated coats of whitewash to which in many cases it has been subjected. Be this as it may, from the nature of the animal size employed, the duration of a Tempera vehicle unprotected is but limited in a climate like that of England.

"Why not then try Oil? Simply because it is wanting in body and absorbent of light. Mixed with other materials these defects may be remedied; but then the good rests with these and the bad with the oil, which darkens by age and in drying shrinks away from its original richness

into a dull thin film, needing a varnish to preserve it; thus adding to the objections which render it an unfit medium for wall painting. What then is to be used? Why not Encaustic? Because the process of Encaustic painting by the use of heat risks the injury of the more delicate colours, and tends to decompose the medium in which the colours have been mixed, repelling part into the wall and drawing part to the surface, often giving it a gloss which is objectionable. The last process in Encaustic painting universally practised by the ancients and recommended by modern painters in that method, is to polish the surface with cloths. A wall painting should, of course, be equally well seen from all parts of the building; but if it be polished, it is only visible in certain positions and certain lights. The modern invention of glass painting, (Stereochrome) may prove most valuable; but experience of it is as yet too short to authorize either perfect confidence, or adverse criticism. The present evident objections to it may be overcome, as the preparation of its materials is improved. For instance, the water-glass with which the colours are set has chemical qualities, so that the number of colours which will stand it is hardly above that of Fresco, where the lime is the difficulty. The potash in the glass-water may be so much diminished as to be harmless to almost any colour; but the danger *then* is that, as little or nothing but silica is left, the water evaporating, leaves an exceeding fragile and delicate film, liable to injury from the slightest causes, and flaking off from the wall, leaving the colours unprotected."

We may observe, *en passant*, that Mr. Maclise recommends, and the German Artists use only the *kali* water-

glass not the potash. "The colours are plain water-colours. they have no vehicle with them either for protection or adhesion. It is inconvenient to use the water-glass with them as a vehicle, because as the water evaporates, the glass remains and the brush becomes rigid. Nor can an oily vehicle help them, or gums as in common water-colour; because then they would be impervious to the shower of glass-water which ought to be absorbed by them and set them. The efflorescence, too, to which a surface painted in water-glass is subject, may be a curable evil, as the composition or proportions of the materials is improved; and the more delicate colours may be made available by being prepared on stronger chemical bases."

Mr. Parry then proceeds to say that, however far his remarks on the systems may be right or wrong, the system he now advocates—Spirit Fresco—possesses all their good qualities without their objection, considered in relation to our climate; having the luminousness of Fresco, the facility of Tempera and water-glass, the richness of Oil and the durability of Encaustic.

"All this is to be obtained by a composition of wax resins and volatile oils, used in certain proportions and upon a definite system. My confidence is founded in great measure on the experience which art has afforded as to the nature and effect of those materials. Wax is an invaluable coating to the particles of colour, and is unaffected by the atmospheric changes of heat and cold, damp or dryness. It dries as it is used, both as to quantity and colour; not like oil, which darkens and becomes a mere thin horny pellicle on the evaporation of the water which is the principal ingredient; nor like size, which is liable

to peel off if used too thick, and to perish if used thin. But wax, although free from these objections, has weaknesses of its own. It is, however, most happily amenable to all demands upon it for mixture with other materials, which remedy its defects.

“Of all works of art which have been preserved to our times, none are in more perfect condition than those which have either been painted in, or protected by an oil varnish. That used in the earlier Middle Ages has in many cases darkened painfully, both from the faulty quality of the oil, and the choice of the resin (commonly Sandarach) with which it was made up. But the protection afforded by it to the picture has been complete. A finer and harder resin not only protects better but darkens less. That which was used by Van Eyck has protected his works perfectly, and has not darkened at all. The preparation used by his school was probably the same as we now have in the finest preparations of artist's copal. In wax painting, several other resins have been tried; but there are objections to most of them for the purposes of wall painting. Mastic, for instance, if used in sufficient quantities to consolidate and toughen the wax, becomes objectionable in another way by its gloss. It is also very hygrometric, Damara is in quality like a very poor edition of mastic, and liable to the same objections. The balsams do not mix well with the copal. But elemi resin will do so by heat, and when added in small proportions to wax, gives it the strength and toughness requisite for our purpose. If then we have a composition of these materials, wax, elemi, and copal, made sufficiently liquid by a fourth which is a solvent of the other three, namely, oil of

spike, we have a medium perfectly applicable to wall painting in this climate; because it has strength to resist external damp, it is free from chemical action on the most delicate colours; it does not change by age, it is subtle enough to penetrate deeply the pores of the wall, and thus to key the pores of the painted surface to it; it is rich enough to protect the colours from the atmosphere and from each other; it is itself transparent, and dries with a dead surface. Whatever be the materials used, or methods of using them, where durability is the object, the one great point to be attained is some ready means of incorporating those materials with the wall itself, so that the painting may be made rather as it were into the wall than merely upon it. Fresco aims at this, by crystallization of the lime enclosing the colours in the drying plaster. Tempera aims at it by the adhesive qualities of the size, with which the porous surface of the wall is prepared. Encaustic aims at it by heat, driving the melted wax into the wall. Stereochromy attains it in a very slight degree, because the delicate shower of water (which must not risk the running of the colours on the perpendicular wall surface) is too fine to penetrate deeply into the pores as a more copious wash would do.

“By a modification of wax painting, a method may be obtained perfectly suitable to our climate by the durability of its materials, and to our light by its powers of colour to be as bright as the illuminations of a missal, or as sober as a Giottesque fresco. It is objected that wax deadens colours. This it need not do. The real objection to the common systems of wax painting, are that they reduce it to a slightly modified oil painting by

mixing drying oils with the wax, and using colours ground up in the oil, or by the contrary fault of trusting the wax too much by itself, without strengthening it sufficiently with other materials.

“Another practice is to prepare the wall with wax, and then paint upon it with oil; this may do for mere decorative work, but for works of fine art its objections are manifest. To meet all the requirements of wall-painting (where the walls are dry) with little risk of injury from the action of our climate, avoiding the objections to other systems and retaining all that is good and effective in them, I recommend the following scheme. Take a medium composed in these proportions:

Pure bleached wax	. . . . . 3 oz.	} by weight.
Elemi resin	. . . . . 1 oz.	
Oil of spike lavender	. . . . . 6 oz.	} liquid
Finest preparation of artist's copal	18 oz.	
		} measure

which shall be used throughout from the first preparation of the wall to the last touch of colour laid upon it; that the whole mass may be perfectly homogeneous, all colours are to be ground up in it, and may be kept in tubes as oil colours are, or in any other way. The same composition diluted in twice its bulk of rectified spirits of turpentine makes the liquid with which the pores of the wall are to be saturated by copious washes. The number of these washes must depend on the absorbency of the wall surface, and the more absorbent that be the better. The last wash should be mixed up with:

Best Gilder's whiting well washed	} three parts in bulk,
and baked dry	
.	} not in weight.

Flake White ground (as usual) in } one part ditto.
 water, and perfectly dry . . . }

to the consistency of thin cream; the surface should be well covered with it, indeed, in most cases, two coats of this are better than one.

“Common rough wall plaster will take two doses of the transparent wash, and two with the opaque white. Each wash should be allowed twenty-four hours to evaporate. The object of these washes is to key the prepared surface deeply into the pores of the wall with a material which dries in them as hard as stone, and leaves a surface white, solid, absorbent, and of a good texture for painting. When the cartoon is traced on the wall, let a part of the design chosen, be enough for a day's work, and washed over thinly with oil of spike, or highly rectified turpentine (the former is better, being a stronger solvent of the copal), the object being to open the surface which will then be painted into and dry into one solid mass, by the evaporation of the volatile oils. The wash should be lightly applied before the palette and colours are prepared for the day's work; the time thus employed, will allow the surface to dry just sufficiently to let the paint be applied without dragging up and mixing with it.

“The vehicle for painting in which the brush must be dipped, must either be the same as the wall wash, only twice as much diluted, or oil of spike alone—or when the cost of oil of spike is an objection, by highly rectified turpentine. The surface dries gradually, not skinning over as oil colours do, but equally throughout by evaporation. There are certain precautions to be taken which

are essential, viz., not to touch any part with a volatile oil but such as is to be painted into, because those oils first melt the resins rather than the wax, and if left unpainted, will probably dry with a slight gloss which is very objectionable; but painting with a good body of colour into places thus softened, restores the unity of the materials and dries dead. There are also some peculiarities in certain colours which a little experience will soon ascertain. Cobalt, for instance, and ultramarine are naturally extremely dry, and require a fuller vehicle than many other colours; with them, therefore, plain volatile oil should not be used as a vehicle, but one composed of the medium diluted with three or four times its bulk of spike oil or turpentine. Ivory black dries badly. It is better to mix with it a fourth part of burnt umber, for all cases where black would otherwise be used alone. Some colours do very well in a thinner vehicle, such as emerald, oxide of chromium, lake, brown and rose madders, Indian and Venetian red, and others; these (mixed up of course with the medium mentioned at first) may be applied with a brush dipped in pure volatile oils.

“ For the preparation of the medium, put first the elemi resin into a copper saucepan, and melt it gently over a charcoal fire or spirit lamp, the object being to evaporate from it the greater part of its essential oil. Then throw in the wax, and after that is melted, let the two ingredients simmer on together for ten minutes or so. Strain them through fine muslin to clear away the pieces of elemi bark or leaves, which if left to boil with the other materials would stain them a dark brown. Into the

vessel to which the elemi and wax are strained add the oil of spike and the copal, and let them boil together, straining them a good deal until a white froth comes on the surface. They are then mixed and may be poured off into jars for use; the medium will not dry quite into a jelly. If that thicker form be required, it may be obtained by using half the quantity of spike oil and by boiling the whole two or three times, taking it off the fire each time, till the froth disappears, and then putting it on again. All this is in practice very little trouble, enough may be prepared in half an hour to last the artist for weeks of work. The only apparatus necessary is a strong spirit lamp or charcoal fire, and the copper saucepans, tinned inside; one, a small one, to melt the elemi and wax in—the other, a larger one, to mix and boil all the materials together. It is a good plan that these saucepans be made rather deep than broad, to avoid all access of the fire to the fumes of the hot materials. A long spoon for stirring, and a large graduated glass for measuring liquids complete the list of apparatus.

“It is necessary to make sure of the best materials. White wax, commonly sold by chemists, is generally much adulterated with spermaceti and tallow, and would be worse than useless. The best bleached wax is obtained from wax merchants and places where it is prepared carefully and pure for photography.

“For merely architectural decorative work, such as diapering, backgrounds, &c., where less expensive materials are required, but at the same time durability is the object in view, rectified turpentine may be substituted throughout for spike oil, animi may be used for copal and

elemi may be omitted altogether, but not substituted by any other resin."

This appears to us both remarkable and important. In a medium consisting of four materials, wax, elemi resin, copal and oil of spike, one of them may be omitted at pleasure, and that where "durability is the object in view," while two of the others may be substituted by other and cheaper ingredients. It would seem as if the wax basis were the one important point. Surely, therefore, gum animi and turpentine might be employed on all occasions instead of the more costly pure copal and oil of spike, especially as we have been previously told that the latter is only a strong solvent of the former. However this may be, it is at least satisfactory to know that for decorative work the cheaper ingredients are sufficient, as we apprehend that the expense of this "spirit fresco" medium will be the chief objection to its use. There certainly appears every reason for anticipating its durability, as the combination of wax and resins is far from new, and has, we believe, always been successful. At the same time, we confess that we think for decorative work an oil vehicle employed upon an encaustic ground—that is a wall prepared with wax—would answer every purpose in an ordinarily dry situation. An incurably damp wall is simply hopeless and should never be coloured. We may add that Frescoes executed in this medium may be seen at Highnam Church, Gloucester, and one by Mr. Leighton in Lyndhurst, Hampshire.

FRESCO.

The art of painting in Fresco is one that has ever been esteemed of very high importance. The great durability which the system ensures, the firmness of touch, breadth of design and thorough knowledge of draughtmanship it necessitates, together with the fact that it has always been regarded with favour by the greatest artists, are alone sufficient to prove its value. Indeed, the very name of Fresco is most commonly, though very erroneously, applied to nearly all Mural paintings of large size, though they may have been executed in Tempera or even Oil media. At the same time, it must be confessed that Fresco has very great disadvantages, especially as regards the art of Mural decoration with which alone we are concerned.

The necessity of painting and finishing while the last coat of plaster, called "intonaco" is damp, not only causes a series of joins all through the picture, but also requires the artist to commence no more than he can finish in the day. Again, it is by no means proof against internal damp, as the frescoes in the Upper Hall of the New Palace at Westminster abundantly prove. And, lastly, the palette is limited in the extreme, only receiving those pigments which are not affected by lime, such as earths and minerals, mostly sober in hue. Still, though not included among those systems which are open to the decorator, some brief account of the manner of its execution may not be uninteresting. Cennini's directions are as follows :

"When you are going to paint on walls, which is the

most agreeable of all kinds of painting, procure, in the first place, lime and sand, and sift both of them well. If the lime is very rich and fresh, it will require two parts of sand and one of lime. Temper them well together with water, and temper enough to last you fifteen or twenty days. Let the lime rest for some time till it be quite slacked; for if any heat remain in it, it will crack the plaster. When you are going to lay on the mortar, first sweep the wall, and wet it well, you cannot wet it too much; and let the lime be well stirred with a trowel, and spread it over once or twice till the intonaco become quite even on the wall. Afterwards, when you are going to work, remember to make the surface of the mortar very stiff and rather rough."

The artists' small drawing or design of the whole composition was, it appears, enlarged or "squared up" to the necessary proportions which formed the cartoon, and was simply executed in white and black chalk without colour. Separate studies, full size, were also made of the various details from which to work. The cartoon then was pricked with small pin-holes, so as to make a pounce by means of which the outlines were transferred to the wall by dusting through powdered charcoal or some red powder. If this method were not employed, the design was simply traced through with a style or blunt point. Cennini continues:

"Take some of the before mentioned lime, stir it well with a trowel until it be of the consistency of ointment. Then consider how much you can paint in a day; for whatever you cover with the mortar you must finish the same day. It is true, that when you are painting on

walls during the damp weather in the spring, the mortar will remain wet until the next day; but if you can help it, do not delay, because when painting in Fresco, that which is finished in one day is firmest and best, and is the most beautiful work. Then spread over a coat of intonaco. Next take your large hog hair brush; first steep it in clean water and wet your mortar with it, and then with a slip of wood, as wide as the palm of the hand, rub over the intonaco, so as to remove the lime where you have put too much, and put more where there is not enough, and thus make your mortar quite smooth. Then wet your mortar with the brush, and, if necessary, rub very smoothly and evenly over the intonaco with the point of the trowel."

The directions which follow apply exclusively to figure and landscape painting with their accessories. The colours are to be ground fine in lime water, and applied in the ordinary way.

Painting in *secco* resembled true Fresco in the use of the plaster ground, with this great difference. The plaster was allowed to dry, but before being painted upon was moistened over with yolk and white of egg diluted in water, the colours being mixed with yolk of egg tempera. In modern usage, the plaster is wetted in the evening with weak lime-water, and again in the morning before painting, the colours being ground in lime water, and used as in *buon fresco*.

ENCAUSTIC.

With the exception of the exact nature of Van Eyck's medium, there is no question presenting greater difficulties than that of the ancient employment of the Encaustic system. From the days of Pliny to the present time there have been many to take the matter in hand; but, unfortunately for the most part, these treatises only involve it in greater obscurity than they found it—partly from insufficient data and partly from loose and inaccurate descriptions. Indeed, even Mrs. Merrifield and Sir Charles Eastlake appear unable to come to any decided conclusion, and leave room for much speculation after all. That there were three methods anciently employed, seems beyond all doubt. The first appears to have been little more than modelling with a graver's tool, or *burin*, in heated wax; in the second the pencil was used, and the wax melted by heat, and diluted with some oil; in the last an essential oil was employed as diluent; but the last stage appears to have been the heating the painted wall surface with a brazier of live coals until it frothed, and finally bringing it up to an exquisite polish by means of wax and linen cloths. For the benefit of those curious in such matters we subjoin Pliny's description.

“It is certain that there were two ways of painting in Encaustic anciently, on wax and on ivory with a graving tool, until ships began to be painted. This caused the introduction of a third way of using wax melted by fire, with a pencil, which system in ships is indestructible

whether by heat, salt (water), or wind.”—*Pliny, lib. 35*. And this is the varnish to preserve it. “On a dry wall let Punic wax melted in oil be applied with a hog’s hair tool, then let it be heated again by the application of hot coals until the wax melts, and afterwards be rubbed with wax and candles.” Thus far Pliny. It may very reasonably be asked why men have wearied themselves over the obscurity which enwraps the subject of Encaustic, where there are other eligible vehicles? Because the idea of the employment of wax is in itself most excellent. Wax is a most incorruptible and imperishable substance, and communicates these properties to the pigments with which it is used, locking them up and keeping them alike from damp, bad air, and mutual contact. Hence modern struggles after the veritable method.

Perhaps, however, the amateur decorator need not perplex himself much, firstly because the old way revived never so faithfully would not save his purpose with its hot brazier and final waxy polish, and secondly because there are one or two very simple and effectual ways in which wax may be employed with all success. Now Sir C. Eastlake remarks that wax may be used :

1. By a solution of wax by a *lixivium*, or any means which will allow of its being mixed with pigments in water ; of this nature is borax.

2. By solution by heat in a fixed oil, and

3. By solution in an essential oil.

This last has been mainly employed in the French and German revivals of Encaustic, resins being added to give strength, and there can be no doubt that this is really

the best and simplest way. Mrs. Merrifield in "Ancient Practice of Painting," Vol. I. gives a receipt as used by an Italian artist. In it the wall is plastered in lime as in fresco, but not quite smooth. The vehicle is wax and resin in turps, which makes a fluid the colour of milk, in this the colours are ground and diluted with turpentine as may be required in using. The pigments dry rapidly and flat. A wax water-colour method invented by Miss Greenland is quoted from the "Transactions of the Society of Arts" by Mr. Field in his book on Chromatography, page 353. "Four and a half ounces of gum Arabic are dissolved in eight ounces of pure water in a glazed vessel, to which seven ounces of powdered mastic are to be added, and the whole stirred over a moderate fire until combined in an opaque uniform paste, five ounces of white wax are then to be added and stirred till melted and beginning to boil, when the vessel should be removed from the fire, and sixteen ounces more of pure cold water gradually stirred into the mixture, which will then form a cream like composition, to be kept in a bottle for use." The best and simplest wax vehicle we have ever used was made by a mixture of copal, wax and turpentine. The best picked copal resin was digested in about twice its bulk of turpentine, the two being put in a bottle in a warm place. To this was finally added sufficient pure white wax melted to render it thick and creamy. The proportions of the wax are easily learned by the fact of its remaining thickly fluid when cold. If it set hard the wax is in excess. The colours were ground in this turpentine, being used as a diluent and worked very pleasantly, drying flat.

The wall surface should be prepared with two or three coats of the Encaustic wash we gave before, page 50. All pigments which may be used in oil or water-colour may be used in this form of Encaustic. We need scarcely add that neither charcoal brazier nor wax candles and linen rag polish are needed.

GILDING.

Gilding, which is the art of applying thin sheets or leaves of gold to any surface previously prepared to receive it, is effected by means (A) of oil size, or (B) japaner's size. It is one of the most important processes in decoration, and the one most difficult for an amateur to acquire, demanding a correct eye and a steady and dexterous hand. A little practice, however, soon overcomes the timidity natural to a beginner, and by patience and care any one may become a good gilder.

Some account of the method of gilding employed by the mediæval artists may be interesting, and we therefore subjoin a *précis* of Cennini's instructions :

"The mordants employed in gilding in mediæval times appear to have been generally those prepared on a tempera basis, or as we should now call it water gilding. Armenian bole ground carefully in the white of egg mixed with its own bulk of pure water was the principal. Of this the panel to be gilded, received four coats, laid on very smoothly, and was afterwards placed and covered up.

When it was wished to gild, the panel was laid flat on two tressels, and lightly swept with a feather to remove dust, next burnished, first with a piece of linen, and next with a dog's tooth. The bole was then moistened with a large pencil dipped in white of egg diluted in water, and the gold applied from a piece of card, and pressed down with cotton wool. The gilding was afterwards mended, or "faulted," by the use of a gold cushion, whereon to cut small pieces as used at present. For burnishing, a choice is given the artist among various precious stones, as 'lapis amatisto,' sapphires, emeralds, balas rubies, topases, rubies and granite. At the same time, not to discourage the poor artist, it is considerably added that the teeth of dogs, lions, wolves, cats (!), leopards, and generally of all carnivorous animals are equally good. One of these precious stones ground on a grindstone, and then rubbed with the dust of emeralds, until no inequalities remained, was set in a metal handle, and formed the burnisher. Gold was usually burnished in slightly damp weather, the stone first being warmed and rubbed so as to secure perfect dryness. Any blemishes were to be mended by breathing on the gold and applying a fresh piece.

"For walls, pictures, glass, iron and every other thing, a mordant prepared in oil was used. White lead and a little verdigris was ground in boiled oil, and afterwards boiled with a little varnish. This appears to have been ready for gilding in one day. In other respects, it must have resembled japanner's gold size. Another mordant is mentioned, which appears to have the quality of receiving the gold at any interval, from half an hour to eternity;

but from its noisome ingredients and general impracticability, is not given here."

The materials necessary for gilding are a cushion, knife and tip, a large short and thick camel hair brush, cotton wool, and oil and japanner's size.

Gold leaf is sold in books of twenty-five leaves, each about three inches square. It is technically reckoned by the hundred, that is the contents of four books, and gilders calculate a work to require so many "hundreds," not so many books. There are thirteen varieties of tint, ranging from a deep orange red down to a white approximating silver.

The cushion is a piece of wood about eight inches by five, covered first with baize, and then with buff leather tightly stitched. At one end there is a raised edge or screw of parchment, which turns partly round the sides. This is to prevent the leaves being blown away by any chance wind. Underneath, the cushion has two, and sometimes three small loops of leather, one for inserting the thumb to hold it by, the others for sticking the knife and camel hair brush in.

The knife for cutting the gold leaf has a long flexible blade, which should not be too sharp, set in a light handle like a palette knife.

The tip is a large flat brush for taking up and placing the gold leaf. It is made of very long squirrel's hair, set thinly between the flat pieces of card. Cotton wool and the thick camel hair brush are used for dabbing down the gold and removing superfluous pieces.

There are two kinds of gold size, fat oil and japanner's size. The former is by far the most durable and brilliant,

so that japanner's size should never be employed save for mending small places and imperfections, or where time is of great importance. It is very desirable in using gold size to have the very best, that you may reckon with certainty upon the time the operation will take. Bad size, on the contrary, is continually disappointing the gilder's expectation and upsetting his arrangements.

The surface to be gilded should first of all be rubbed smooth, if stone with pumice, if wood with Dutch rushes, if a very bright level effect be desired. After this it should have its priming of glue size, and two coats of oil paint and one of flatting. To enrich the colour of the gold, these last may be laid down in red or yellow. White, however, is usually preferred as the darker colour renders any imperfection in the gold sizing more difficult to detect. When the last coat of paint is thoroughly dry, it is as well to rub it over with wash leather, to render it pleasantly smooth and free from dust or grit. If there be any patterns or figures which are to be left ungilded, they should be lightly pounced over with white to prevent the gold leaf adhering to them. Another way is to paint them over with the white of egg diluted with water. If any little piece of gold sticks to this it can easily be washed, or wiped off with a moistened handkerchief. When all is ready for sizing, strain as much size as you think sufficient through muslin, and put some out on your palette, adding to it, if you like, enough vermilion mixed with oil alone to colour. Then with a stiff hog hair tool commence painting it on the surface you desire to cover, taking care to lay it on smoothly, and not too

thick. If it is put on too thickly it runs, and leaves unseemly wrinkles in your gilding.

Size always from left to right, beginning at the top of your surface, and working downwards. Move your brush lightly and firmly, mapping out the surface to be sized into several squares, and finishing and cross hatching each before proceeding onwards. If there are patterns to be left ungilded, carefully trace round their outline first with a sable pencil, and then fill in the interstices. When your whole surface is covered with size, give it a thorough inspection to make sure there is no faulty portion, and if there be, delicately touch in the size with a small pencil. When very perfect gilding is required, it should be sized twice, the first coat of course being allowed to dry thoroughly before the second is applied. In carved work, be careful to dip your brush down deep into the hollows of the carving.

It is a good plan to size over night, so that you may gild in the morning. But all size does not dry alike, sometimes taking twelve to twenty-four or thirty hours before it is ready for the gold leaf; in damp weather or positions, always more than in dry. The readiness of your size can only be ascertained by the touch. If on being touched by the finger the surface daubs or comes off, it is not ready, and must be left; if, however, it feels clammy and sticky, and has what painters call "tack," it is sufficiently matured. If too dry it must be sized again.

The books of gold leaf should always be placed before the fire some half hour previous to use, in order to thoroughly dry the gold and make it more manageable.

When all is ready, shake out several leaves upon your gold cushion, and blow them towards the parchment screen. Then carefully raise one leaf with the blade of your knife, and place it on the cushion, gently breathing on it to flatten it out. If it manifest a disposition to cockle up, do not be nervous and fidgetty, but play it about with your knife blade until it lies as flat as you could wish. Then replace the knife in its loop under the cushion, and taking the tip in your hand, pass it lightly over your hair, thus acquiring sufficient greasiness to enable the gold to stick to it. Lay the hairy portion of the tip upon the gold leaf, and then raising it, apply it to the surface sized. As in sizing work from left to right be specially careful to let each leaf overlap slightly, so as to avoid gaps and spaces. Lay on whole leaves as far as the space allows, and then proceed to gild the curves and corners which need smaller pieces. Place a leaf flat and smooth on your cushion, and then taking the knife in the right hand, draw the edge easily and evenly along it with a gentle pressure. Divide the leaf into as many pieces as you require, and lay on as before. When all your ground is complete, give a very careful inspection to make quite sure there are no portions ungilt, however small, and mend them at once, otherwise your gilding will be faulty. You may now take a piece of cotton-wool, and gently dab or press your gold down all over, finally brushing off the superfluous pieces either with cotton-wool or the camel hair brush. It is a good plan to stipple the gold with a large stiff hog hair tool, quite dry and clean, as this gradually softens and removes the marks of joining, and other little imperfections. You may finally smooth the

gold with a clean piece of wash leather, and it is completed.

With regard to gilding with japanner's size, the above remarks hold, save as to the time necessary to wait between sizing and gilding. If japanner's size is used pure, it will ordinarily be ready in from twenty to thirty minutes, but better gilding can be made by mixing one-third oil size with two-thirds of japanner's size. This will be ready in about two or four hours from the time of putting on. It should, however, always be borne in mind that gilding in pure oil size is not only the most brilliant, but the most durable.

When all your gilding is finished, dilute one-third very clean and pure parchment size in two-thirds water, and brush it all over the surface of the gold to enrich and preserve it. If it be necessary to gild in a position much exposed to touch, as the base of a pillar, string-courses, &c., it is as well to give the gold a coat of mastic varnish thinned with turpentine.

There are various processes which tend to enrich and vary the effect of gilding.

Glazings of transparent colour are sometimes applied for the purpose of deadening its lustre. Raw sienna passed thinly over a sheet of gold gives it an agreeable leathery appearance. Glazings of red, green and blue, are not to be recommended, as they have a tinselly and pantomimic effect.

A very good effect may be produced by stencilling a small powdering or set diaper in umber, sienna, or Indian red over gold, especially if there be foliage or arabesque work upon the gilding as the small diaper affords an

agreeable amount of relief. For the manner of doing this, see the account of stencilling.

If any of the figures are to have raised and gilded glories or nimbi, as the paintings of the Middle Ages were adorned, the following method will be found good. Strike a circle from the centre of the face with a pair of compasses, cover this with a smooth paste made of plaster-of-paris mixed with diluted glue-size, laid on with a spatula or palette knife: clear the edge of the circle from any roughness of the plaster, and afterwards rub it smooth as paper with pumice-stone or Dutch rushes; it may then be sized and gilded. If any pattern or fringe be wished upon the nimbus, it should be engraved with a steel instrument having a dull point, and these ornaments may afterwards be painted.

TEXT PAINTING.

For several reasons this little work would be incomplete without some mention of text-painting, as well as to guard against its abuse as to define and describe the legitimate sphere of its employment. Many as have been the advantages accruing from the revival of the sister Art of Illumination, yet it must be confessed that it certainly has had one very pernicious result—I mean the deluge of texts of all shapes, sizes, patterns, and colours, which it has brought down upon our churches. Under the name of “Illuminations,” texts of all degrees of badness

are perpetrated by nearly everyone who can rule a line or hold a pencil, and consequently it is difficult to find a church which now has not been invaded by an army of parti-coloured scrolls and devices. And yet all this had been done for the most part with such good intentions, so much time and labour has been expended upon these unhappy scrolls, that one can only regret that the want of proper knowledge and discretion has turned all this zeal and labour into a wrong channel. It will not, then, be a bad thing to consider a little what is the proper, and what the improper use of these scrolls.

Strictly speaking, they can *never* be placed as ornaments. Letters in themselves, are far from ornamental things; their only merit consists in legibility and simplicity—if they have to convey an idea, it must be in the simplest manner possible; everything which impedes this, turns aside from their lawful end and object. There is no more beauty in a page of ordinary printing, or even of an illuminated MS., than there is in a problem of Euclid. It is merely an assemblage of dots, dashes, and lines—the beauty is in the idea conveyed by those dots, dashes, and lines. Of course this applies only to the ordinary type—the initials and borders of a page are to be considered very differently—they are *pictures*, not letters, and whether they can be read or not, matters very little. Looked at in this light, the absurdity of employing as ornaments letters whose only business is to be plain and useful is manifest. But again: to be of any service in a church, they must be of great size and distinctness, legible at almost any distance; and, moreover, placed in such positions as not to require a person to stand on his

head, lie flat, or recline on one side, to peruse them. And yet what is the actual state of the case? We find scrolls over arches of great height, under window-sills, running up eastern gables, on wall-plates, principals, rafters, and in short, in every conceivable position which caprice or ignorance could suggest. Employed in this wild manner, they are neither useful or ornamental. But this is not all: instead of being written upon a plain tablet, or in a straight line, we find them in circles, triangles, ovals, and devices so multiform as to lead one to suppose that Euclid had been rifled to supply designs for them. Nor is it alone in the position and design that these scrolls offend. It really seems as if the only aim had been to convert a plain text of Scripture into an utterly unintelligible scrawl. Letters of all degrees of difficulty and obscurity are employed. German text, old Gothic, Byzantine, and Rustic letters, interspersed with mystic capitals, show how easily a plain thing is made puzzling.

And what are the arguments brought forward in behalf of texts or scrolls? Their use by mediævalists, and the desirability of the employment of Scripture in this form. Quite true, texts *were* occasionally used in the Middle Ages, and are sometimes now discovered upon the walls of our old churches—but with this important difference: they were almost used in connection with a subject-painting to explain and illustrate it, in a similar manner as we find them in 15th century glass. But do we meet with them as independent ornaments? I think not; certainly not on those hideous zinc plates which are employed now. In the 17th century it is quite true they were much used, from an idea that they instructed

the poor. Some over-zealous reformers had destroyed most of the mural paintings (superstitious or not) which then were supposed to be a means of instruction to the ignorant, and to supply this defect, texts in the vernacular were painted very generally over the church walls which the poor could not read. But is there the same need of them now? Are Bibles and Prayer Books no cheaper now than in the 17th century? or is their type less legible to the poor than that of the scrolls and texts? I believe that as a matter of fact our village children are far greater adepts at small pica and diamond type, and Roman capitals, than at Gothic and Byzantine letters. If these ornaments be desired, let them be applied in a proper way; if instruction be wished, let it be given through its natural channels, but do not let us have a hybrid production aiming at both and attaining neither.

If I have spoken hitherto somewhat severely of the employment of texts, it is that I regret, as I have before said, to see time, labour, and money so uselessly employed. I do not exaggerate when I say that the money expended in the last ten years upon zinc scrolls would have gone far to decorate very many churches with that beautiful kind of Polychrome which has been described. It is difficult to find one architect who does not condemn scrolls in churches; all alike admit that they are unsuitable and detrimental to the general effect. They invariably give a "spotted" appearance to the walls on which they are placed, and call particular attention to what does not repay inspection, and when we reflect that the same amount of time bestowed on a text would suffice to paint a beautiful border, which would adorn and help

its position, it is natural to desire to turn the thoughts of amateur illuminators in the latter direction.

But though, as I firmly believe, inadmissible in churches, yet there are certain places where texts are very lawful and indeed desirable. In a bedroom, sitting-room, or private oratory, and in general in any place which allows of their being easily read and understood, texts may be very well employed *if wished*. But even here they cannot be too simple and unassuming. Plain black gothic letters should be used with red, blue, or gold capitals. The letters must be upright, with an honest look about them, as if they knew their proper vocation and were not ashamed of it—no fantastic tails and twistings, and above all, no turned-back ends. Everyone knows that the text is written on a plain piece of paper, and that the ends are not *really* turned back; then why paint a sham which can deceive no one? Put a cross at the beginning of your text, write it plainly, and finish with some quaint device or stop, edging the paper with a narrow red or blue line; or, if you like, a simple border; but do not use such an elaborate edge as to make it appear that you painted the text for the border rather than the border for the text, for the only use of a border is to prevent the eye from wandering over the margin.

I feel that I shall incur the anger of a host of zealous and *jealous* scroll-painters by what I have said, and can only rejoice that I am not speaking my own opinions only, but those I believe of nearly all the architects of most repute. I hope, and indeed feel sure, that a little reflection on the subject will show that I have not overstated it, and may lead to their energies being turned to

a more sensible and beautiful way of ornamenting our sacred edifices. Then, perhaps, when they know the pleasures of real church-painting they will forgive me my rough handling of their former employment.

DESIGN.

Although, as has been said, the principles of design in decorative art form no portion of the plan of this little book, that being left to those artists whose special education alone enables them to pronounce with authority—yet, perhaps, a few hints as from one amateur speaking to others may not be unacceptable to some of our readers. It must be borne in mind, however, that they are put forward as mere *suggestions*, and cannot therefore lay claim to authority.

For a really successful decorative design, three things are chiefly necessary : a due relation of the various parts, a proper proportion of the parts, and carefully-studied colour. It were idle to try and say which is the most important of these three. Of one thing the amateur may be certain, that without them his labour will be in vain. Perhaps the first is the most neglected because it is a point almost requiring special training. We frequently see a design in which each part severally is good, while their combination forms a bad and unpleasing whole. It is simply because there is no relation between them, because they do not help or bear on each other but

resemble sweet chords of music struck at random, or flowers carelessly arranged. A good design must be like a building in which each stone has its place and duty. Each several part is incomplete without its neighbour, each lending something of strength of harmony, of contrast to the other. And again, so nicely must this be balanced that the removal of one part in a perfect design will mar all the rest. As an example, take a Gothic moulding of the decorated period. At some distance, all you perceive is a nicely-balanced mass of light and shade. Come a little nearer, and you begin to make out the prominent features and general arrangement; while, when close, you discover that all this effect is produced by some half-dozen mouldings, fillets, and deep hollows, all working together in their respective positions and harmonising as one great whole. Remove or alter the position of one, and all is ruined; put light for shade, fillet for hollow, and you change all.

So then in your design, first fix on the general effect you desire, then consider how best you may attain this by the relation, the harmony or the contrast of your several parts. Every design ought to mean something—to have something to say—and to say that clearly too—so, what letters and words are to your thought-containing sentences, each pattern is to your whole design. Try then not to write all in capitals, though this is perhaps most natural to amateur beginners both in penmanship and art. Directly one pattern strikes you as more prominent than the others, without due reason, you may be sure that you have misplaced a capital and are conveying a wrong meaning. Try first whether alteration of colour will right you, if not, change anything which seems open to objection in the

setting out of the pattern : if it still be too obtrusive, take a convenient-sized brush and a pot of white paint. This method is infallible. Then begin *da capo*. You will of course before commencing any decorative design, as for instance the colouring of a sitting-room, make a general design roughly. This in all probability will simply be a point of departure, as it is more than likely that every feature will undergo some change in the course of execution. It would be interesting if original designs were always shown by the side of completed works, if only to prove how much experience guides even the most educated, and how frankly a man of genius will submit to alteration where he sees improvement sure to follow. This rough sketch, however, ought to enable you to determine the balance and relative importance of your parts. It will show you the relationship between walls, cornice, ceiling, windows, doors, and fire-place, and the varying importance of each. Altogether, if you be careful, they are capable of conveying an idea and producing a perfect chord ; if careless, you will merely produce a medley.

Again, in dealing with parts, be regardful of harmony and contrast. Ordinarily they will be determined by the nature and position of the object to be coloured. Varying surface requires contrast ; even or continued surface admits of harmony. And this you must aim at no less by form than colour. For example, in Gothic work the ball-flower moulding is always striking whether coloured or not, because the quick shifting procession of round forms is contradicted as it were and held together by the two long straight boundary lines of the moulding. Take those away, and you have simply a row of spots devoid of meaning. Again the repetition of a few details

is better than an endless multiplication of them. A design, composed of half-a-dozen good patterns judiciously grouped and well contrasted in colour, is infinitely more pleasing than a Chinese puzzle-like arrangement of fifty incongruous pieces. If a design or pattern be good, the eye is not offended by meeting it again under different circumstances and colours, just as the most agreeable effects in music are produced by the repetition of a melody with a change of key and time. But, however varied the parts, the design and motive of the whole should be easily appreciable. Thus, draw a circle and enclose it with straight lines in a square, and however you fill this form up with infinite variations of colour and pattern, the dominant idea will still be that of rotundity enclosed in squareness, because nothing can subdue these trenchant forms. Not less important is the rule of due proportion because so nearly connected with that of relation. You must fix on some point of sight from which you purpose your chief effects to be visible, and then determine the size each pattern must be with reference to its position both *per se* and in combination with others. Of course, size depends very much on the importance of the pattern in question. Indeed, in many cases it is not necessary for the pattern to be seen at all, so that it produce its due effect of blueness, greenness, or redness as may be desired. If you doubt this, colour some of the mouldings of your cornice. Fix on some fillet with a deep moulding on each side, and colour it vermilion. Note the effect. Then gild on this a broken pattern of rings and spots, or something simple, but so small that the details of the pattern are invisible below. Now look up and observe the change. Your coarse strong vermilion has passed into

the most lovely golden orange, full of changing broken colour and mystery, and the pattern is nowhere. The individual pattern has patriotically sacrificed itself for the well-being of the whole. Enlarge and define it so as to be plainly seen below, and instantly it becomes common-place and tame. Again; on your proper proportion depends entirely the effect you produce of size or the reverse. Note the bad effect of large-patterned paper-hanging and furniture in a small room. Arrange your diapers and patterns so as to cover their ground and fill their space pleasantly, neither to look squeezed or inflated, teasing in their minuteness, or overwhelming in their magnitude. Perhaps, on the whole, the safest way to determine both relation, proportion, and colour, is to try each pattern on paper in its proper position and judge what alterations are necessary in size, &c. Lastly—colour. And than this we may say there is nothing more important, for while bad colour cannot be redeemed by any amount of proportion, defective proportion and indifferent drawing may sometimes be condoned by thoroughly good colour. And yet spite of its importance, there is very little to be said respecting it in the way of rule or advice. And that mostly negative. Colour is a special gift, an instinct powerful to some, but almost impossible to reduce to rules beyond the simplest. If the reader wishes to be convinced on this point, let him fortify himself and take a tour through Field, Chevreul, Hay, and Sir Gardner Wilkinson. If he have any ideas left at the end, he will perceive that every theory is excellent until upset by its contradictory, and that beyond the first really simple rules, demonstrable to any eye, the path becomes beset by ranging sphinx-like monster theories which devour the

insolvent student. In a word, if you have an eye and feeling for colour, you will colour well and without effort ; but if not, not all the theories of secondaries, tertiaries, proportional parts, rainbows, prisms or musical chord-arguments will not make you colour otherwise than vilely, badly, hopelessly and uselessly. If you want to learn, go to Nature, and remember that before you can colour well you must see well. It is wonderful how many unconsciously-blind people there are, and sometimes how really difficult it is to see. Often you may see a lovely colour in an autumn leaf, which perhaps you would pronounce purple ; go nearer, it looks brown ; pick it, and it turns out to be dark green.

There are a few hints which we really may learn from nature and reduce to art—few, because not possessing her receipt for setting her palette, her medium, vehicle, and materials, we cannot take all the liberties she does. Let us observe first that she almost never uses crude unbroken colour ; how she breaks her colour, how she obtains those delicious subtle gradations and passages from tint to tint, or hue to hue, is a mystery, but at least observe and grant the fact. At a distance, a rose appears one piece of carnation, look close, and each leaf differs from its neighbour, each leaf is one glow of gradated colour. And even in some flowers, where ‘our lack lustre’ eyes are unable to see the subtle change of tint, nature effects it by light or shadow influencing its position. How to reduce this to practice ? In a very partial manner, thus. Let the reader try an experiment for himself. Describe a circle, and then rubbing up some cœruleum, colour it, taking care to apply the colour evenly and flat. Now describe a second circle, and on the back of a plate

rub up without regard to position small unequal portions of *cœruleum*, *ultramarine*, *indigo*, *Veronese green*, *burnt sienna*, and perhaps a touch of *gamboge*. While moist, place the paper on which the second circle was described upon this plate and then remove. Now see which of your circles you prefer, the flat wash of *cœruleum*, or the mysterious splash of all colours mingled—we will venture to say you will decide on the latter. The first is dead, the second flashing with life. And to apply this further, inasmuch as a wall cannot be decorated by reversing smudged palettes: in painting any pattern where you would have set your palette with one red, one blue and one green, use many tints of the same colour. Dip your brush, or stencil-tool, at random into them, and work them in as you proceed. Do you know, as Cennini would say, what the effect will be? The horror of professional writers and decorators, and the pleasure of all who understand and love colour. But remember that this is applicable only in a limited degree. If you have to colour a large space, as ground for a diaper, you cannot for many reasons afford to break this, it must be a flat wash, the flatter the better. But you will reserve your broken colours for delicate little pieces—small patterns—the grounds on which emblems or devices stand, little gems as it were to which your broad spans of flat colour may serve as frames and back-ground. And even in large spaces where broken colour cannot actually be used, a broken effect may be produced by the judicious choice of colours in diapering. Thus lighter tints of the ground colour may be always employed with safety. Salmon tint on Indian red, light on dark green, vermilion on chocolate, and even the reverse of these, *i.e.*, dark on light will have

the desired effect of mellowing, softening, and breaking colour in large masses. And another hint, avoid crude colour, mix your tints freely. A green compounded of blue, yellow, brown, and a dash of red or purple will always be far more lovely than any flat colour your box possesses. The most agreeable colours are those difficult to name, which seem to tremble on the verge of another colour. And this is a rule absolute, for both white and black are in nearly every case enriched and improved by judicious tempering with other colours. Thus for white, add a dash of yellow or red for warmth, blue or green for coldness, so that a green-tinted white will look best in a pattern where there is much Indian red, and a pinky white may be opposed to much blue or grey. Black is always improved by the addition of a little blue in which we follow nature, who rarely employs pure black unmixed with other colour. Black is after all a relative colour and one producible by contrast. Thus, under certain circumstances and effects, Indian red or burnt umber may be made to stand for it where the introduction of anything darker would be harsh and unpleasant.

Of all unpleasant colours, perhaps, emerald green is most so, because it is so terribly self-assertive and resolved, and yet even this has its place and use, which brings us to our last hint. Brilliant colours in great quantity are by no means necessary for brilliant effects, they should be reserved as heightening touches. In colouring, as in life, extravagance demoralises the mind, and where high colours are used in profusion, the eye refuses to recognise their value and becomes wearied. To prove this, colour any simple pattern with vermilion, ultramarine at its full power, emerald green and brown, putting in a little

gilding. Then taking the same pattern, use Indian red for vermilion, indigo for ultramarine, white for green, leaving the gold. Note the contrast, one looks dull, heavy and gaudy, the other delicate, and full of light. The battle of colour has after all to be fought with the four colours, Indian red, indigo, ochre and white, employing for enrichment, black tempered with umber. If a good effect cannot be produced with these, the colour-box may be closed in despair. Rely on these for your general effect, and employ your brightest colour, like jewels, rarely but judiciously. The greatest proof of good colouring is a pleasant sense of warmth and breadth, a perception of general effect to the exclusion of details. If every friend who inspects your design or work fixes on some particular detail for praise, be sure you have made some blunder and paint it out forthwith, cheerfully but firmly. It had no business to be so self-assertive.

No one can be more aware how crude and fragmentary the above hints are—nay, possibly, how mistaken some may be—than the author. Still, as the friendly hints of an amateur of some little experience are they put forward, rather than the dogmatic declarations of an authorized teacher. And as the remarks of a child sometimes open up reflection and suggest fruitful ideas, so possibly these notes may induce useful trains of thought to those better able to pursue and carry them out in their entirety than the author.

THE END.

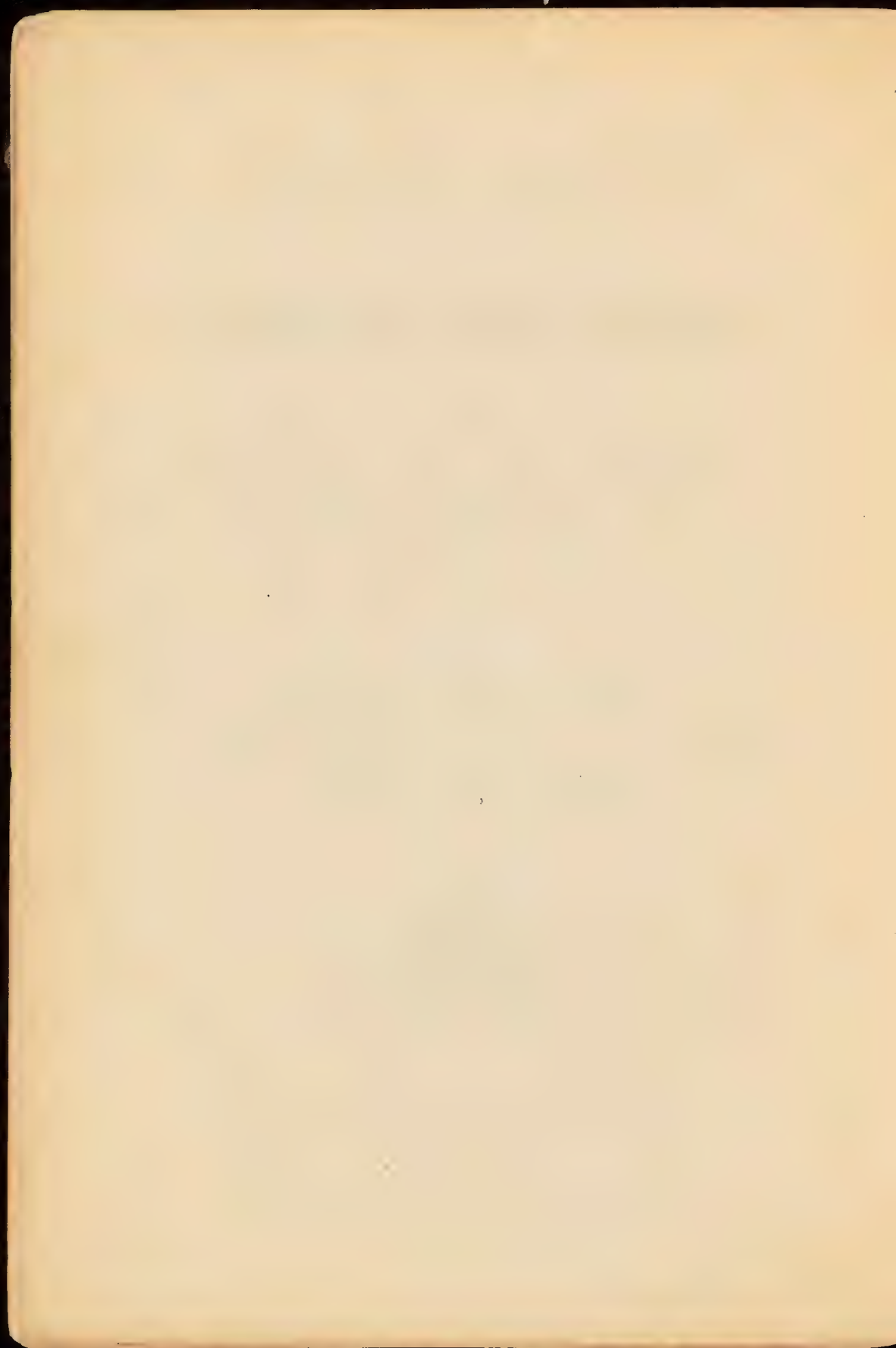
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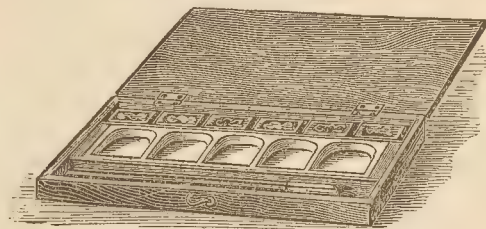
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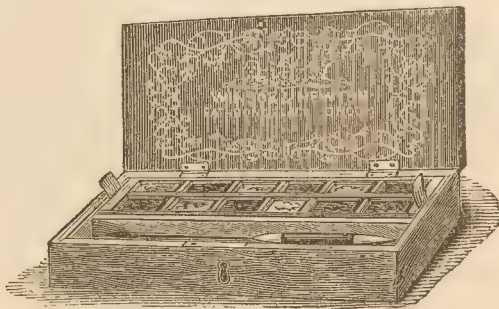
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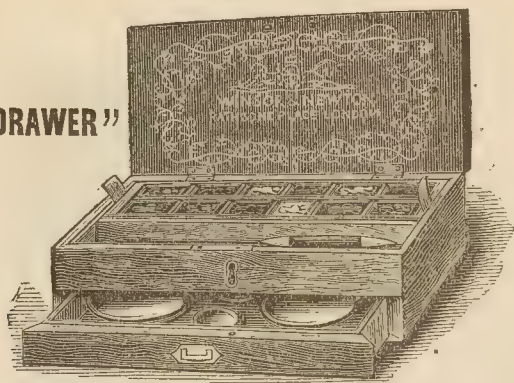


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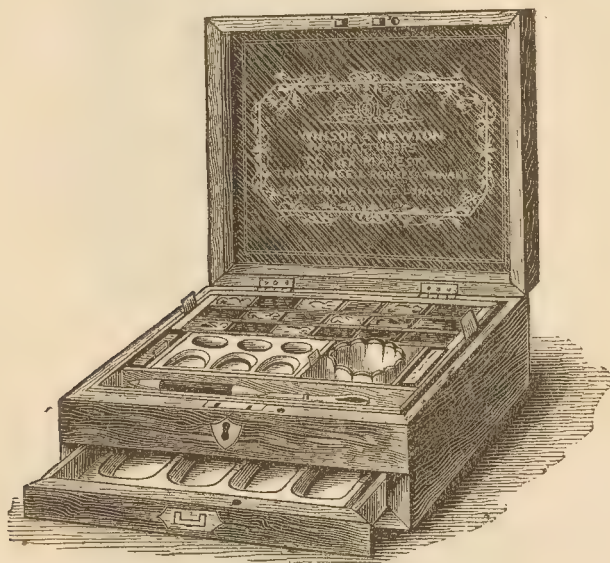
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				.	.	.	3	3	0

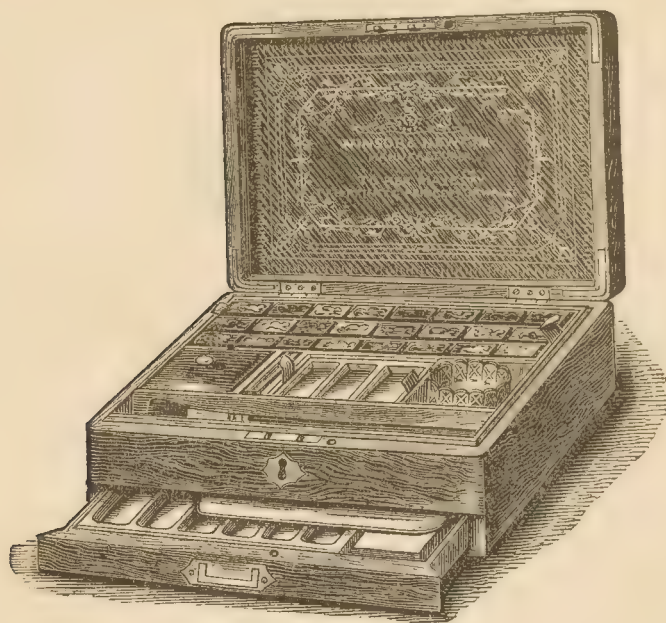
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18	Ditto	ditto	ditto	.	.	.	2	12	6
24	Ditto	ditto	ditto	.	.	.	3	3	0
				.	.	.	4	14	6

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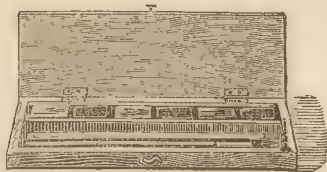
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24	Ditto	ditto ditto	.	.	6	6	0
36	Ditto	ditto ditto	.	.	9	9	0
12	Cake	"Extra Handsome" Box, with choice fittings	.		4	14	6
18	Ditto	ditto ditto	.	.	5	15	6
24	Ditto	ditto ditto	.	.	8	8	0
36	Ditto	ditto ditto	.	.	12	12	0
50	Ditto	ditto ditto	.	.	21	0	0

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24 Ditto ditto ditto	.	.	.	9	6
	.	.	.	12	6

6 HALF CAKE "LID" Box, with brushes	s.	d.
	.	.	.	5	0

12 HALF CAKE "LOCK" Box, with fittings	s.	d.
18 Ditto ditto ditto	.	.	.	9	0
	.	.	.	12	0

12 HALF CAKE, "LOCK AND DRAWER" Box, with fittings .	.	.	.	s.	d.
18 Ditto ditto ditto ditto	.	.	.	12	0
	.	.	.	15	0

12 HALF CAKE "COMPLETE" Box, with fittings .	.	.	.	s.	d.
18 Ditto ditto ditto	.	.	.	14	0
	.	.	.	18	0

12 HALF CAKE "CADDY LID" Box, with full fittings .	.	.	.	s.	d.
18 Ditto ditto ditto	.	.	.	20	0
	.	.	.	25	0

N.B.—Whole Cake Water Colour Boxes, manufactured of Spanish Mahogany, Rosewood, Ebony, Walnut, and other choice Woods, in the first style of workmanship, and variously fitted with every requisite for Miniature, Figure, or Landscape Painting, Engineering, &c., from £30 to £100. Also Brass Bound Boxes for India, &c.

WINSOR & NEWTON'S
MOIST WATER COLOURS
IN PORCELAIN PANS.

WINSOR AND NEWTON'S Moist Water Colours *are prepared after peculiar processes, and by a system of treatment known only to the Makers.* Their characteristic qualities of easy solubility and prompt readiness for use are retained, unimpaired, for an unlimited period of time; so that a box of them, which may have been laid aside for two or three years, when required for use will be found *no less serviceable than when first purchased.* Climate also fails to affect these colours, which are found to be, and to remain, no less "Moist" in Tropical countries than in England; accordingly, they are confidently recommended to persons who are going to INDIA, and to all residents in the East. While having this valuable quality of solubility in their solid form, they possess another and all important one, *in drying perfectly firm on the paper* when in use. Their tints, too, are pure and luminous, and their washes clear and even.

In Sketching from Nature, and, when representing transient and evanescent effects, the superiority of the Moist Colours is at once felt and appreciated. Ever ready for instant application, they enable the desired tint to be produced *at once*—a result unattainable by the old tedious method of rubbing dry cakes, which not unfrequently permits the effect, and with it the *thought* of the artist to vanish, before the material can be obtained. It was this quality which, on their first introduction, secured for Winsor and Newton's Moist Colours the eminent popularity that they still enjoy with both professional and amateur artists.

The Moist Colours are placed in pans (in their size resembling the ordinary dry-cakes) of thin porcelain, and they are afterwards enclosed in tin-foil for greater security. When required for use, the foil is removed. A surface of colour is then presented to the artist, which is obtainable in any quantity, simply by the application of a wet brush.

WINSOR & NEWTON'S
MOIST WATER COLOURS,

IN

WHOLE AND HALF CAKE PORCELAIN PANS.



WHOLE CAKE PAN.



HALF CAKE PAN.

WHOLE PANS, 1s. each.—HALF PANS, 6d. each.

Antwerp Blue
Bistre
Blue Black
Brown Ochre
Brown Pink
Burnt Sienna
Burnt Umber
Chinese White
Chrome Yellow
Cologne Earth
Deep Chrome
Emerald Green
Gamboge
Hooker's Green, No. 1.
Hooker's Green, No. 2.
Indian Red
Indigo
Italian Pink
Ivory Black
Lamp Black

Light Red
Naples Yellow
Neutral Tint
New Blue
Olive Green
Orange Chrome
Payne's Grey
Prussian Blue
Prussian Green
Raw Sienna
Raw Umber
Roman Ochre
Sap Green
Terre Verte
Vandyke Brown
Venetian Red
Vermilion
Yellow Lake
Yellow Ochre

WHOLE PANS, 1s. 6d. each.—HALF PANS, 9d. each.

Brown Madder
Crimson Lake
Indian Yellow
Leitch's Blue
(or Cyanine Blue)
Mars Yellow
Neutral Orange

Purple Lake
Roman Sepia
Rubens' Madder
Scarlet Lake
Scarlet Vermilion
Sepia
Warm Sepia

WHOLE PANS, 2s. each.—HALF PANS, 1s. each.

Cobalt Blue
Orange Vermilion
Violet Carmine

WHOLE PANS, 3s. each.—HALF PANS, 1s. 6d. each.

Aureolin
Burnt Carmine
Cadmium Yellow, Pale
Cadmium Yellow
Cadmium Orange
Carmine
French Blue
(or French Ultramarine)
Gallstone

Green Oxide Chromium
Indian Purple
Intense Blue
Lemon Yellow
Pink Madder
Pure Scarlet
Rose Madder
(or Madder Lake)
Viridian

WHOLE PANS, 5s. each.—HALF PANS, 2s. 6d. each.

Mars Orange
Purple Madder
Smalt
Ultramarine Ash

WINSOR & NEWTON'S
PATENT-FLEXIBLE-DIVISION
JAPANNED TIN BOXES OF
MOIST WATER COLOURS.

~~~~~  
(See illustration on opposite page.)  
~~~~~

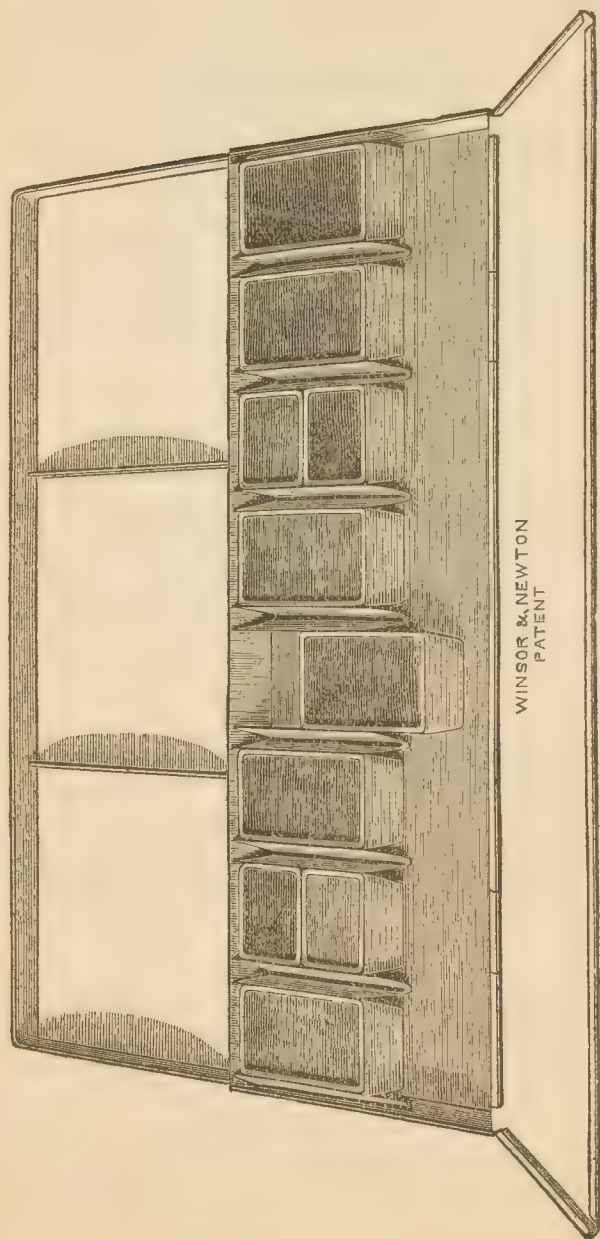
It has long been felt as a considerable inconvenience, that in ordinary Boxes of Moist Colours the pans cannot be removed (without breakage or damage), in consequence of their having to be fastened to the bottom of the box to prevent their falling out. Virtually it is impossible for the purchaser to alter the arrangement of the colours, and generally nothing but the breakage of the empty pan, (and sometimes the division of the box as well,) will enable him to replace a spent colour.

WINSOR & NEWTON'S *Patent-Flexible-Division Box* obviates these annoyances, and permits of colours being inserted and taken out, or re-arranged at pleasure.

N.B.—Winsor & Newton's Japanned Tin Boxes for Moist Water Colours are light and strong, with flaps of a dead white colour, serving as palettes. The Selections of Colours placed in them have been made with much care, and after due study of the various lists of the first Water Colour Artists.

N.B.—In all cases of Boxes of Moist Water Colours the prices quoted are for the Box and the Moist Colours contained therein only; no general fittings being included.

WINSOR & NEWTON'S PATENT-FLEXIBLE-DIVISION MOIST COLOUR BOX.



PATENT-FLEXIBLE-DIVISION BOX OF MOIST WATER COLOURS.

(For Prices see pages 16 and 17.)

WINSOR & NEWTON'S
PATENT-FLEXIBLE-DIVISION
JAPANNED TIN BOXES OF
MOIST WATER COLOURS.

~~~~~  
(See illustration on previous page.)

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|                  |                                                                                                                                                                                                                                                                                                 |                  |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| (Empty, 3s. 6d.) | <b>2 Cake Box.</b><br>Chinese White, and Sepia.                                                                                                                                                                                                                                                 | Fitted, 5s. 6d.  |
| (Empty, 4s.)     | <b>3 Cake Box.</b><br>Chinese White, New Blue, and Sepia.                                                                                                                                                                                                                                       | Fitted, 6s. 6d.  |
| (Empty, 4s. 6d.) | <b>4 Cake Box.</b><br>Raw Sienna, Light Red, Cobalt, and Vandyke Brown.                                                                                                                                                                                                                         | Fitted, 8s. 6d.  |
| (Empty, 5s.)     | <b>6 Cake Box.</b><br>Gamboge, Yellow Ochre, Crimson Lake, Light Red, Prussian Blue, and Vandyke Brown.                                                                                                                                                                                         | Fitted, 10s. 6d. |
| (Empty, 6s.)     | <b>8 Cake Box.</b><br>Gamboge, Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, and Vandyke Brown.                                                                                                                                                                          | Fitted, 14s.     |
| (Empty, 6s. 9d.) | <b>10 Cake Box.</b><br>Gamboge, Aureolin ( $\frac{1}{2}$ ), Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Cobalt, Indigo, Brown Pink, and Vandyke Brown.                                                                                               | Fitted, 18s.     |
| (Empty, 7s. 6d.) | <b>12 Cake Box.</b><br>Gamboge, Aureolin ( $\frac{1}{2}$ ), Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Cobalt, Indigo, Brown Pink, Vandyke Brown, and Neutral Tint.                      | Fitted, £1 1s.   |
| (Empty, 8s. 3d.) | <b>14 Cake Box.</b><br>Gamboge, Aureolin ( $\frac{1}{2}$ ), Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Burnt Sienna, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Cobalt, Indigo, Brown Pink, Vandyke Brown, Neutral Tint, and Sepia. | Fitted, £1 5s.   |

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(Empty, 9s.)                      **16 Cake Box.**                      Fitted, £1 11s. 6d.

Gamboge, Aureolin ( $\frac{1}{2}$ ), Pale Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Cobalt, Indigo, Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, and Neutral Tint.

---

(Empty, 10s. 6d.)                      **18 Cake Box.**                      Fitted, £1 15s.

Gamboge, Aureolin ( $\frac{1}{2}$ ), Pale Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Lake, Cobalt, Indigo, Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

---

(Empty, 12s.)                      **20 Cake Box.**                      Fitted, £2 2s.

Gamboge, Aureolin, Raw Sienna ( $\frac{1}{2}$ ), Pale Cadmium Yellow ( $\frac{1}{2}$ ), Yellow Ochre, Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Lake, Cobalt, French Blue, Indigo, Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

---

(Empty, 15s.)                      **24 Cake Box.**                      Fitted, £2 12s. 6d.

Gamboge, Aureolin, Lemon Yellow ( $\frac{1}{2}$ ), Raw Sienna ( $\frac{1}{2}$ ), Yellow Ochre, Pale Cadmium Yellow ( $\frac{1}{2}$ ), Cadmium Orange ( $\frac{1}{2}$ ), Cadmium Yellow, Burnt Sienna, Rose Madder, Crimson Lake, Light Red, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Lake, Cobalt, French Blue, Prussian Blue, Indigo, Viridian ( $\frac{1}{2}$ ), Emerald Green ( $\frac{1}{2}$ ), Terre Verte ( $\frac{1}{2}$ ), Oxide of Chromium ( $\frac{1}{2}$ ), Olive Green, Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

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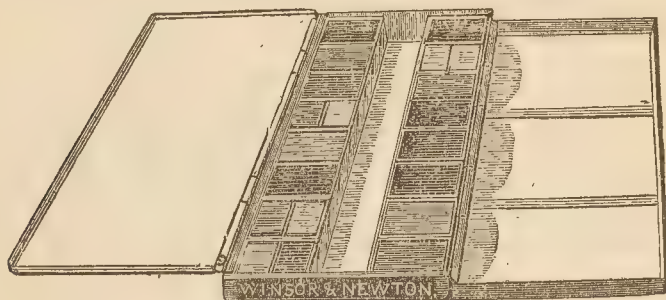
(Empty, 18s.)                      **30 Cake Box.**                      Fitted, £4 4s.

Gamboge, Pale Cadmium Yellow ( $\frac{1}{2}$ ), Lemon Yellow ( $\frac{1}{2}$ ), Aureolin, Raw Sienna, Yellow Ochre, Cadmium Yellow, Cadmium Orange, Mars Orange, Burnt Sienna, Rose Madder, Carmine, Crimson Lake, Light Red, Orange Vermilion, Vermilion ( $\frac{1}{2}$ ), Indian Red ( $\frac{1}{2}$ ), Brown Madder, Purple Madder, Burnt Carmine, Violet Carmine, Smalt ( $\frac{1}{2}$ ), Intense Blue ( $\frac{1}{2}$ ), Emerald Green ( $\frac{1}{2}$ ), Viridian ( $\frac{1}{2}$ ), Ultramarine Ash, Cobalt, French Blue, Prussian Blue, Oxide of Chromium ( $\frac{1}{2}$ ), Terre Verte ( $\frac{1}{2}$ ), Brown Pink, Vandyke Brown, Neutral Tint, and Sepia.

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WINSOR AND NEWTON'S  
JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.



JAPANNED TIN BOX OF MOIST WATER COLOURS.

The Lists of Colours are the same as placed in the Patent-Flexible-Division Boxes of Moist Water Colours, (Pages 16, and 17).

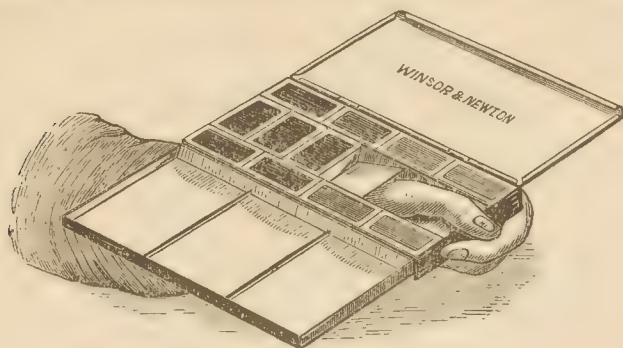
WHOLE CAKE.

| Empty.<br>s. d. |              | Fitted with<br>Colours.<br>£ s. d. | Empty.<br>s. d. |               | Fitted with<br>Colours.<br>£ s. d. |
|-----------------|--------------|------------------------------------|-----------------|---------------|------------------------------------|
| 3 0             | 2 Cake . . . | 0 5 6                              | 6 9             | 14 Cake . . . | 1 5 0                              |
| 3 3             | 3 " . . .    | 0 6 6                              | 7 6             | 16 " . . .    | 1 11 6                             |
| 3 6             | 4 " . . .    | 0 8 6                              | 8 3             | 18 " . . .    | 1 15 0                             |
| 4 0             | 6 " . . .    | 0 10 6                             | 9 0             | 20 " . . .    | 2 2 0                              |
| 4 6             | 8 " . . .    | 0 14 0                             | 9 9             | 22 " . . .    | 2 5 0                              |
| 5 3             | 10 " . . .   | 0 18 0                             | 10 6            | 24 " . . .    | 2 12 6                             |
| 6 0             | 12 " . . .   | 1 1 0                              | 12 6            | 30 " . . .    | 4 4 0                              |

HALF CAKE.

| Empty.<br>s. d. |               | Fitted with<br>Colours.<br>£ s. d. | Empty.<br>s. d. |                | Fitted with<br>Colours.<br>£ s. d. |
|-----------------|---------------|------------------------------------|-----------------|----------------|------------------------------------|
| 3 3             | 3 Half Cake . | 0 5 0                              | 6 0             | 14 Half Cake . | 0 15 0                             |
| 4 0             | 6 " . . .     | 0 7 6                              | 6 6             | 16 " . . .     | 0 18 0                             |
| 4 6             | 8 " . . .     | 0 9 0                              | 7 0             | 18 " . . .     | 1 1 0                              |
| 5 0             | 10 " . . .    | 0 10 6                             | 7 6             | 20 " . . .     | 1 5 0                              |
| 5 6             | 12 " . . .    | 0 12 6                             | 8 6             | 24 " . . .     | 1 11 6                             |

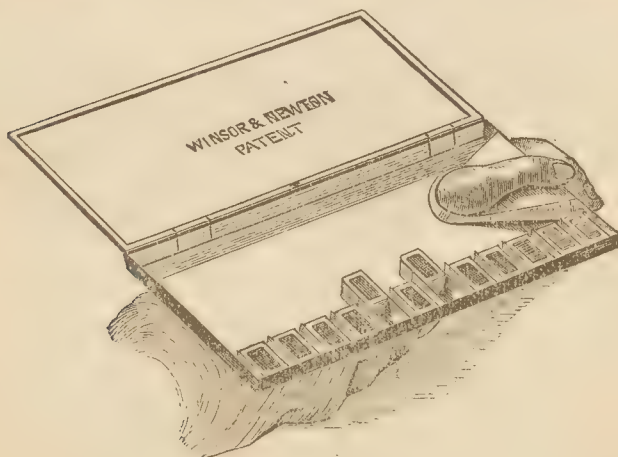
## WINSOR &amp; NEWTON'S THUMB-HOLE BOXES.



THUMB-HOLE BOX.

| Empty. |    |    |                                        |   |   | Fitted with Colours. |
|--------|----|----|----------------------------------------|---|---|----------------------|
| s.     | d. |    |                                        |   |   | £ s. d.              |
| 9      | 0  | 11 | Cake Moist Water Colour Thumb-hole Box | . | . | 1 5 0                |
| 10     | 6  | 17 | „ ditto                                | . | . | 1 15 0               |
| 12     | 0  | 21 | „ ditto                                | . | . | 2 5 0                |

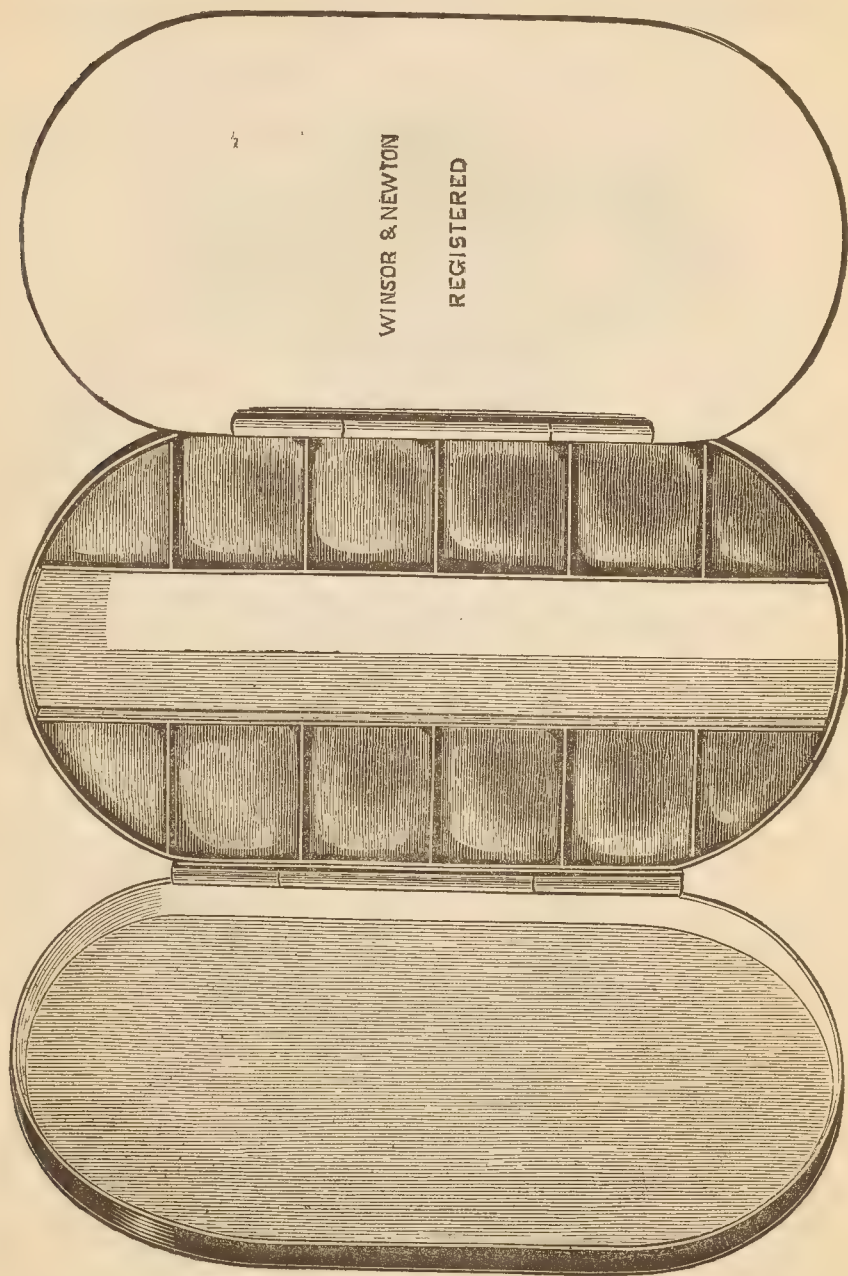
## WINSOR &amp; NEWTON'S PALETTE-BOXES.



PALETTE BOX.

| Empty. |    |    |                                          |   |   | Fitted with Colours. |
|--------|----|----|------------------------------------------|---|---|----------------------|
| s.     | d. |    |                                          |   |   | £ s. d.              |
| 5      | 0  | 6  | Half Cake Moist Water Colour Palette Box | . | . | 0 8 6                |
| 5      | 6  |    | with Patent Flexible Divisions           | . | . | 0 10 6               |
| 6      | 0  | 8  | Ditto ditto ditto                        | . | . | 0 12 6               |
| 6      | 6  | 10 | Ditto ditto ditto                        | . | . | 0 15 0               |
|        |    | 12 | Ditto ditto ditto                        | . | . |                      |

## THE OVAL-POCKET-BOX.

THE OVAL-POCKET-BOX  
(Size of the box.)



---

WINSOR & NEWTON'S  
REGISTERED  
JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.

---

THE OVAL-POCKET-BOX.

REGISTERED NO. 257,752.

*(As illustrated on opposite page.)*

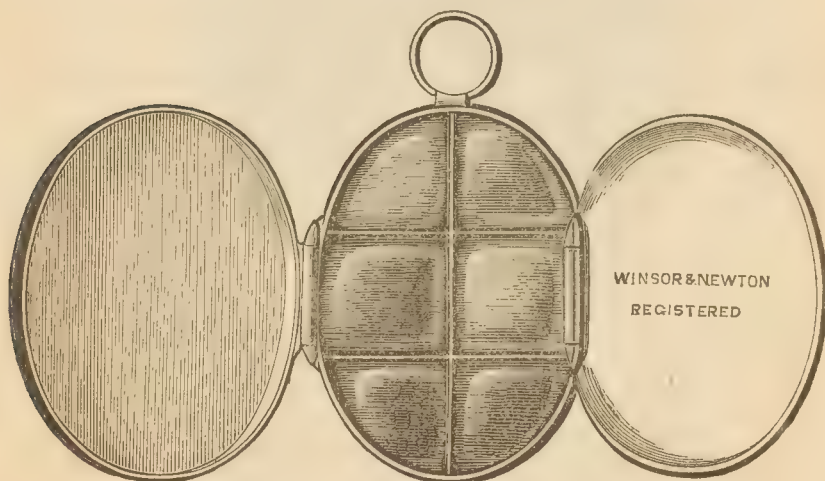
Very convenient for the pocket, both in shape and size. Contains twelve Colours, and has a division for brushes.

*Fitted with twelve Colours, Price 15s.*

---

THE LOCKET BOX.

REGISTERED NO. 257,753.



THE LOCKET BOX.  
*(Size of the box.)*

A neat, light, bijou Box, that can be carried on a watch-guard or chain, and containing six Colours.

*Fitted with six Colours, Price 6s. 6d.*

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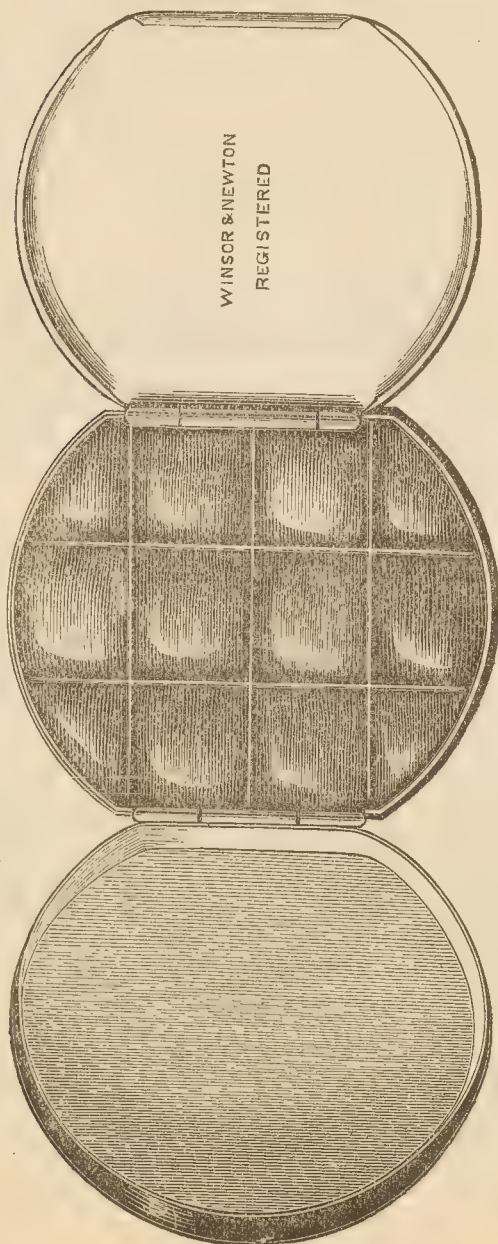
WINSOR & NEWTON'S  
REGISTERED JAPANNED TIN BOXES OF  
MOIST WATER COLOURS.

CONTINUED.

---

THE PORTE-COULEUR.

REGISTERED NO. 215,673.



THE PORTE-COULEUR.  
(Size of the box.)

Small and compact for the waistcoat-pocket. Contains twelve Colours.

*Fitted with twelve Colours, Price 10s. 6d.*

## WINSOR & NEWTON'S MOIST WATER COLOURS

IN COLLAPSIBLE TUBES.



Moist Tube Colours, though somewhat wasteful and troublesome in use, are of assistance as furnishing quickly a quantity of colour, and affording facilities for power of touch and vigour of effect. They should, however, be used within reasonable time, as they do not keep so long or so well as the ordinary solid or "Pan" form of Moist Colour.

### 1s. each.

Antwerp Blue  
Bistre  
Blue Black  
Brown Ochre  
Brown Pink  
Burnt Sienna  
Burnt Umber  
Chinese White  
Chrome Yellow

Deep Chrome  
Emerald Green  
Gamboge  
Indian Red  
Indigo  
Italian Pink  
Ivory Black  
Lamp Black  
Light Red

Naples Yellow  
Neutral Tint  
New Blue  
Olive Green  
Orange Chrome  
Payne's Grey  
Prussian Blue  
Prussian Green  
Raw Sienna

Raw Umber  
Roman Ochre  
Terre Verte  
Vandyke Brown  
Venetian Red  
Vermilion  
Yellow Lake  
Yellow Ochre

### 1s. 6d. each.

Brown Madder  
Crimson Lake  
Indian Yellow

Leitch's Blue  
(or Cyanine Blue)  
Mars Yellow  
Neutral Orange

Purple Lake  
Roman Sepia  
Scarlet Lake

Scarlet Vermilion  
Sepia  
Warm Sepia

### 2s. each.

Cobalt Blue

| Orange Vermilion

| Violet Carmine

### 3s. each.

Aureolin  
Burnt Carmine  
Cadmium Yellow, Pale  
Cadmium Yellow

Cadmium Orange  
Carmine  
French Blue (or  
French Ultramarine)

Gallstone  
Green Oxide Chrom.  
Indian Purple  
Pink Madder

Rose Madder  
(or Madder Lake)  
Viridian

### 5s. each.

Mars Orange

| Purple Madder

| Ultramarine Ash

| Smalt

## JAPANNED TIN BOXES OF MOIST TUBE WATER COLOURS,

Containing 12 Moist Tubes £1 1s.; 15 ditto, £1 11s. 6d.; 20 ditto, £2 2s.;  
24 ditto, £2 12s. 6d.; 30 ditto, £3 13s. 6d.



---

WINSOR & NEWTON'S  
GLASS-COVERED MOIST WATER COLOURS  
FOR  
Illumination and Missal Painting,  
Decorative and Ornamental Work, &c.

~~~~~  
(See illustration on opposite page.)
~~~~~

The complete separation effected by the Colours being contained in separate Gallipots, the protection afforded by the glass lids, and the convenience of seeing tints through them, cause this form of colour to be most useful in all cases where it is of importance to avoid dust, dirt, and accidental admixture of tints. WINSOR and NEWTON'S Glass-Covered Moist Colours, being preserved clean and unsullied while in use, have been adopted generally for Illumination, and all kindred arts.

*Colours and Prices same as those of Moist Water Colours in Pans.  
Pages 12 and 13.*

~~~~~  
WINSOR & NEWTON'S
FITTED BOXES
OF GLASS-COVERED COLOURS AND MATERIALS
FOR
Illumination and Missal Painting,
DECORATIVE AND ORNAMENTAL WORK, &c.

- ~~~~~
- Half Guinea Box.—Containing seven Half Colours in Pans, and fittings.
Guinea Box.—Containing eight Glass-covered Colours, and Materials.
Guinea and a Half Box.—Containing twelve ditto ditto.
Two Guinea Box.—Containing sixteen ditto ditto.
Three Guinea Box.—Containing twenty-one ditto ditto.
Five Guinea Box.—Containing twenty-four ditto and complete Materials.
-



GLASS-COVERED MOIST WATER COLOUR.

(See opposite page.)

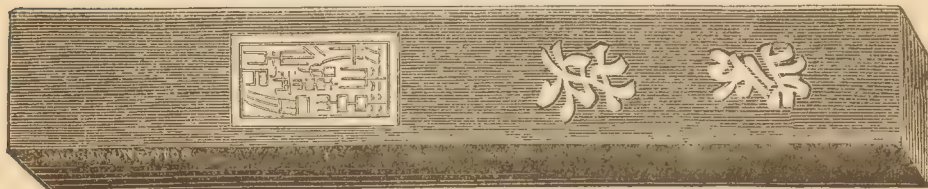
WINSOR & NEWTON'S
JAPANNED TIN BOX OF COLOURS AND MATERIALS FOR
PAINTING ON GLASS.

Price £2 2s.

WINSOR & NEWTON'S FRENCH POLISHED MAHOGANY
CADDY LID BOX OF COLOURS AND MATERIALS FOR
Heraldic Blazoning.

Price £3 3s.

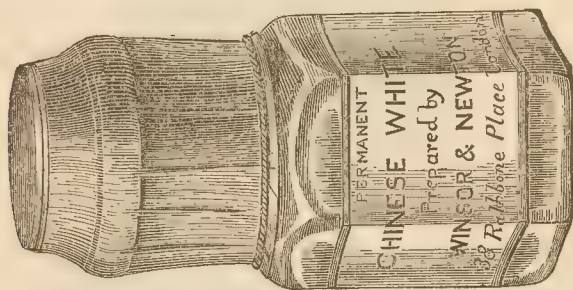
INDIAN INK.



"SUPER SUPER" INDIAN INK.—(Size of Stick.)

Per stick.		Per stick.	
s.	d.	s.	d.
Good, small size 80 to the lb.	0 6	Best, larger, 40 to the lb.	1 6
Best, small size, „ „	1 0	Best, larger, 32 „	2 6
Very Choice "Super, Super" .	.	per stick	7 6

WINSOR & NEWTON'S PERMANENT CHINESE WHITE.



BOTTLE OF CHINESE WHITE.
(Size of the bottle.)

WINSOR AND NEWTON'S Oxide of Zinc, sold under the name of
CHINESE WHITE.

*A peculiar preparation of White Oxide of Zinc, the only eligible
White Pigment for Water Colour Painters.*

~~~~~  
PRICE 1s. PER BOTTLE.  
~~~~~

It is now upwards of *thirty-seven* years since WINSOR AND NEWTON turned their attention to remedying a want that was much felt by the Water Colour Painters of that day, viz.: of a White that should combine perfect permanency with good body in working. The invention and introduction of the pigment named by them "Chinese White" was the result, and its superior body and freedom of working immediately attracted the notice of the leading Water Colour Painters.

The late Mr. J. D. Harding being particularly desirous of ascertaining its permanency, and by submitting it to the examination of one of the greatest Chemists in Europe (the late M. Faraday), having satisfied himself that it might be employed with perfect safety, strongly recommended it in preference to all other white pigments. In his "*Principles and Practice of Art*," he wrote:—

"When this pigment, which is prepared by Winsor and Newton under the name of 'Chinese White' was first put into my hands, some years ago, I applied to one of my friends, whose name as a chemist and philosopher is amongst the most distinguished in our country, to analyze it for me, and to tell me if I might rely on its durability; the reply was, that if it would in all other respects answer the purpose I required of it, I had nothing to fear on account of its durability."

Ever since that time (1834) WINSOR AND NEWTON'S Chinese White has been in use by all the Eminent Water Colour Artists, and it is a source of great satisfaction to WINSOR AND NEWTON that they are able to say, *that in no instance has any work of art, in which their White has been used, suffered from its employment*, while prior to its introduction the complaints of Whites changing were of every day occurrence.

WINSOR & NEWTON'S
WATER COLOUR LIQUIDS, MEDIUMS, &c.



BOTTLE OF LIQUID COLOUR.
(Size of the bottle.)

	s.	d.
Liquid Indelible Brown Ink, for Outlines or for Sketching per bottle	1	6
Liquid Prout's Brown "	1	6
Liquid Sepia "	1	6
Liquid Asphaltum. (In bottles similar to illus- tration on opposite page) "	1	6
Liquid Carmine "	1	6
Liquid Indian Ink, for Architects, Surveyors, &c. "	1	0
Colourless Liquid Ox Gall "	1	0
Artist's prepared Gum Water; pure, clear, and strong small bottles "	0	6
Ditto ditto middle bottles "	0	9
Ditto ditto large bottles "	1	0
Water Colour Megilp "	1	6
Illuminating Body, for Illumination, Missal Painting, &c. "	1	6
Raising Preparation, for Illumination, Missal Painting, &c. "	1	6
Water Mat Gold Size per gallipot	1	6
Prepared Ox Gall "	0	6

WINSOR & NEWTON'S
 FINEST
 BROWN OR RED SABLE BRUSHES
 IN QUILLS
 FOR
 WATER COLOUR PAINTING.



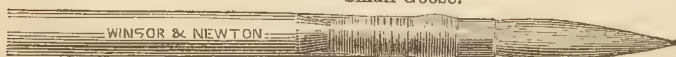
Crow.



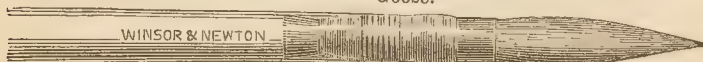
Duck



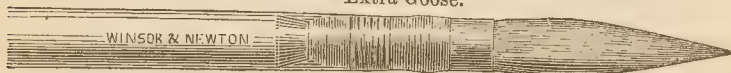
Small Goose.



Goose.



Extra Goose.



Extra Small Swan.



Small Swan.



Middle Swan.



Large Swan.

WATER COLOUR SABLES IN QUILLS.
(Sizes of the Brushes.)

WINSOR & NEWTON'S

FINEST BROWN OR RED **SABLES IN QUILLS.**

(See illustrations on opposite page.)

				<i>s.</i>	<i>d.</i>					<i>s.</i>	<i>d.</i>
Crow	.	.	.	each	0	6	Extra Small Swan	.	each	4	6
Duck	.	.	.	"	0	8	Small	"	"	6	6
Goose	.	.	.	"	1	0	Middle	"	"	8	6
Extra Goose	.	.	.	"	1	6	Large	"	"	10	6

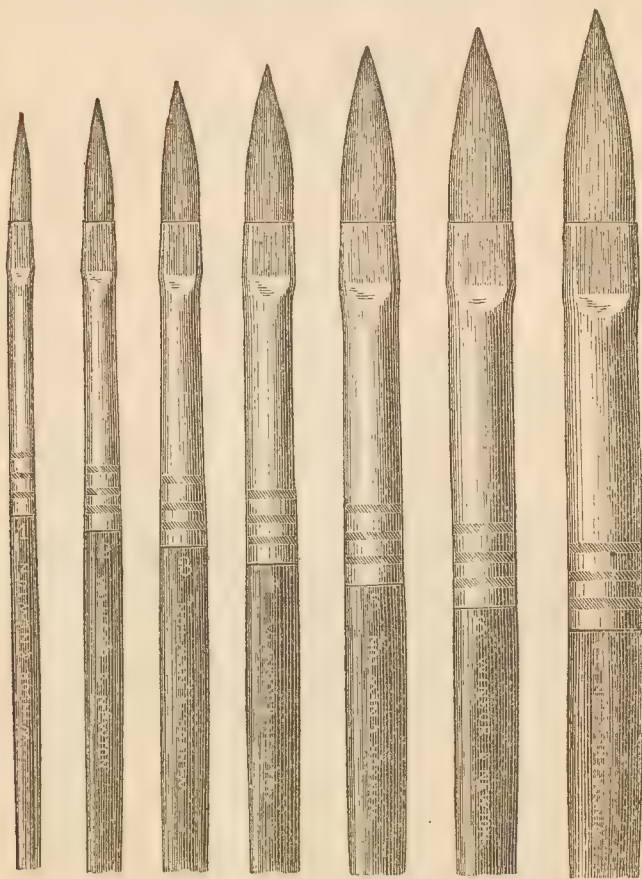
FINE **SIBERIAN HAIR** BRUSHES IN QUILLS.

				s.	d.				s.	d.	
Crow	.	.	.	each	0	2	Extra Small Swan	.	each	1	6
Duck	.	.	.	"	0	4	Small	"	"	2	6
Goose	.	.	.	"	0	6	Middle	"	"	3	6
							Large	"	"	5	0

CAMEL HAIR BRUSHES IN QUILLS.

				s.	d.				s.	d.	
Crow	.	.	.	each	0	1	Extra Small Swan	.	each	0	9
Duck	.	.	.	"	0	1	Small	"	"	1	0
Goose	.	.	.	"	0	2	Middle	"	"	1	6
							Large	"	"	2	0

WINSOR & NEWTON'S
FINEST BROWN OR RED WATER COLOUR
SABLES IN ALBATA.—FLAT.

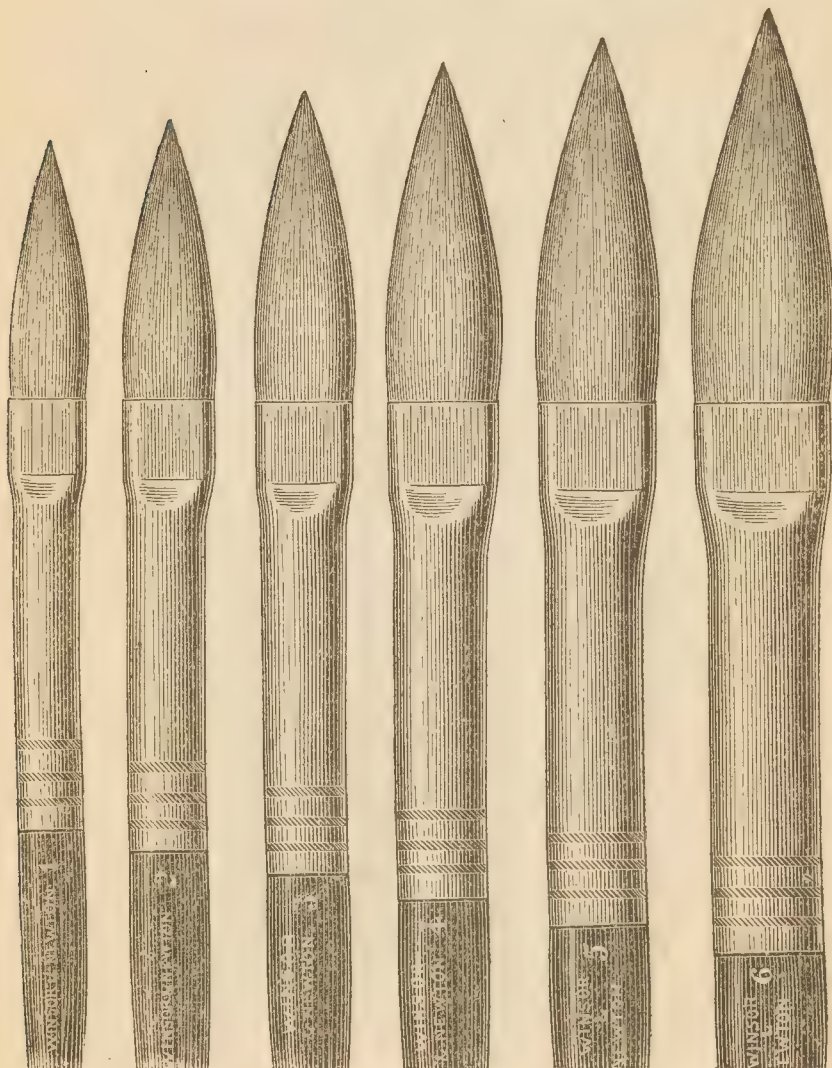


FLAT WATER COLOUR SABLES IN ALBATA.—(*Sizes of the Brushes.*)

				s.	d.					s.	d.
No. 1	.	.	each	1	0	No. 5	.	.	each	2	6
" 2	.	.	"	1	3	" 6	.	.	"	3	0
" 3	.	.	"	1	6	" 7	.	.	"	4	0
" 4	.	.	"	2	0						

N.B.—These Brushes have *Ebony* Handles, and are marked with *three nerls* on their *Albata* Ferrules.

DITTO.—EXTRA LARGE SERIES.

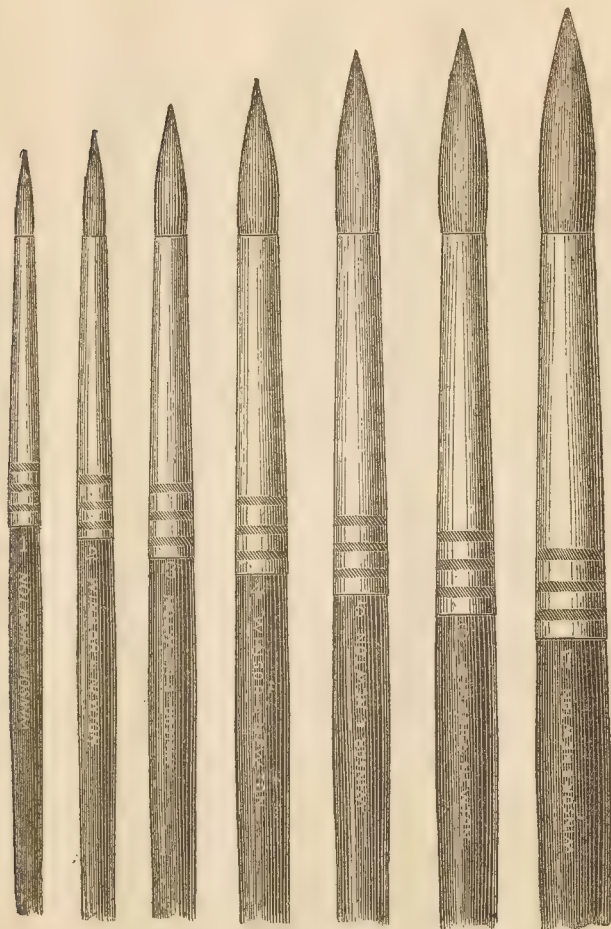


FLAT SABLES IN ALBATA.—EXTRA LARGE SERIES.—(Sizes of the Brushes.)

				s.	d.					s.	d.		
No. 1	.	.	.	each	6	0	No. 4	.	.	.	each	15	0
" 2	.	.	.	"	9	0	" 5	.	.	.	"	18	0
" 3	.	.	.	"	12	0	" 6	.	.	.	"	21	0

Note.—Nos. 4, 5 and 6 made in *Brown Sable* only.

WINSOR & NEWTON'S
FINEST BROWN OR RED WATER COLOUR
SABLES IN ALBATA.—ROUND.

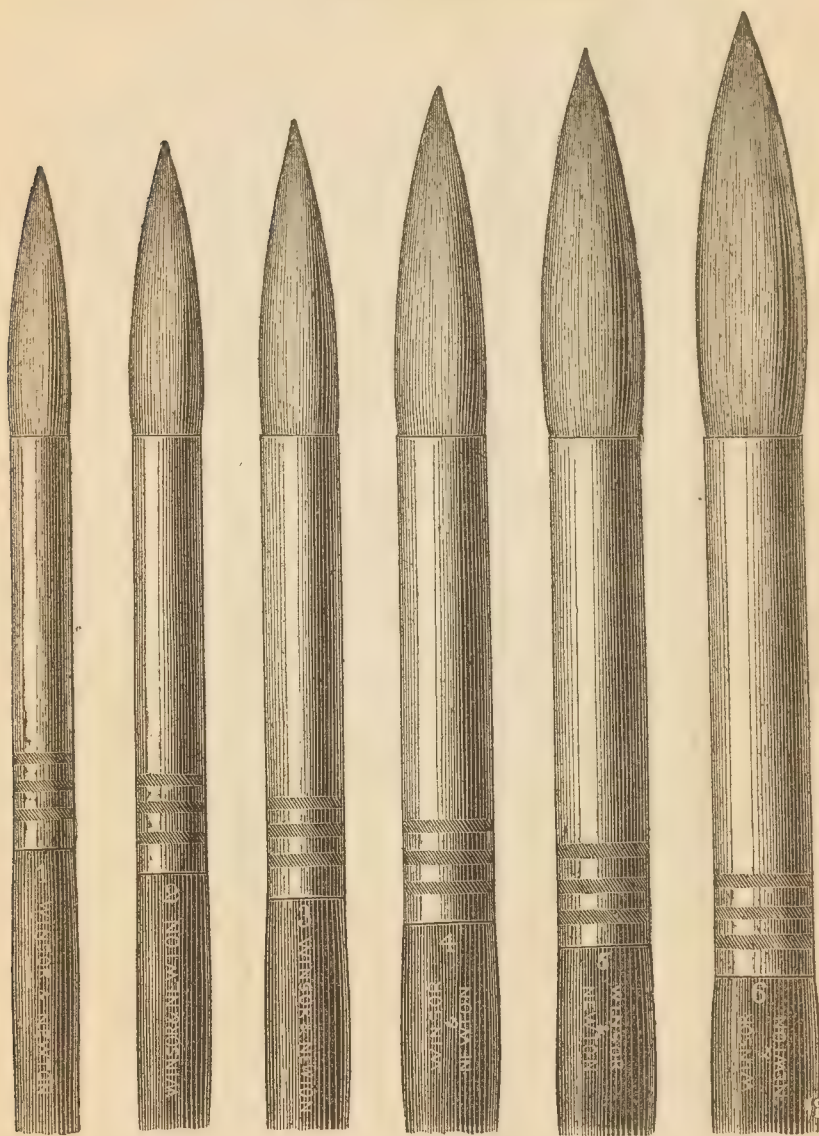


ROUND WATER COLOUR SABLES IN ALBATA.—(Sizes of the Brushes.)

				<i>s.</i>	<i>d.</i>					<i>s.</i>	<i>d.</i>
No. 1	.	.	each	1	0	No. 5	.	.	each	2	6
" 2	.	.	"	1	3	" 6	.	.	"	3	0
" 3	.	.	"	1	6	" 7	.	.	"	4	0
" 4	.	.	"	2	0						

N.B.—These Brushes have *Ebony* Handles, and are marked with *three nerls* on their *Albata* Ferrules.

DITTO—EXTRA LARGE SERIES.

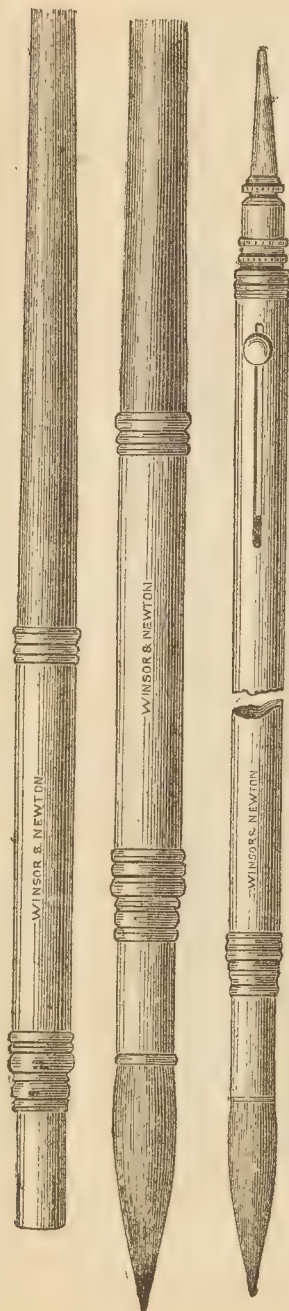


ROUND SABLES IN ALBATA.—EXTRA LARGE SERIES.—(*Sizes of the Brushes.*)

No. 1	each	s. 6 d. 0	No. 3	each	s. 12 d. 0	No. 5	each	s. 18 d. 0
" 2	"	9 0	" 4	"	15 0	" 6	"	21 0

Note.—Nos. 4, 5 and 6 made in *Brown Sable* only.

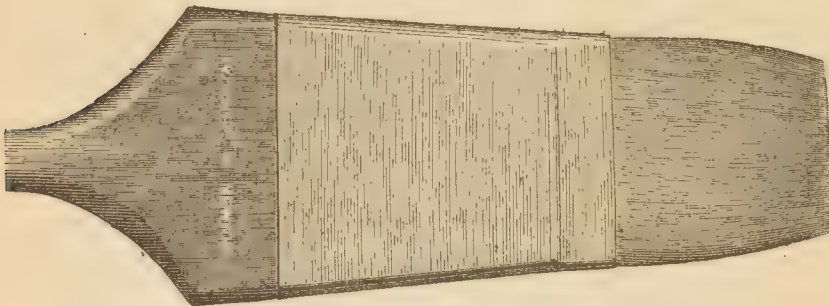
WINSOR & NEWTON'S POCKET SABLES IN ALBATA.

POCKET SABLES IN ALBATA. (*Sizes of the Pocket Brushes.*)

Small Pocket Sable in Albata	.	.	.	.	.	s. 7	d. 6
Large Pocket Sable in Albata	.	.	.	.	.	10	6
Silver Brush Case and Pencil combined	.	.	.	.	.	15	0
M. Leads for replenishing ditto	.	.	.	.	.	0	6
					per box		

These Brushes are made to accompany any of the Registered Boxes of Moist Colours (pages 21 and 22); thus supplying a light and instantly available means of sketching, tinting, or making colour notes.

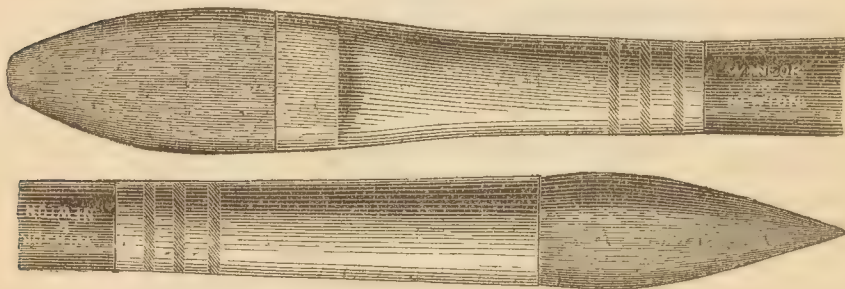
BROAD RED SABLE BRUSHES IN ALBATA.



BROAD RED SABLE IN ALBATA. (*Size of the 1 inch Brush.*)

$\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{2}$, 2, and $2\frac{1}{2}$ inches wide. Price 5s. per inch.

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		s.	d.
Siberians in Tin, Flat	each	1	6
Ditto in Quill, Round	„	2	6
Wash Dyed Sables in Tin, Flat or Round	„	3	6
Ditto in Albata, Flat or Round	„	5	0

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Royal	N. and HP.	”	24 ” 19½	0	4
Imperial	N. HP. and R.	”	30¾ ” 22½	0	6
Double Elephant	N. HP. and R.	”	40 ” 27	0	9
Antiquarian	N. . . .	”	52½ ” 30½	4	0

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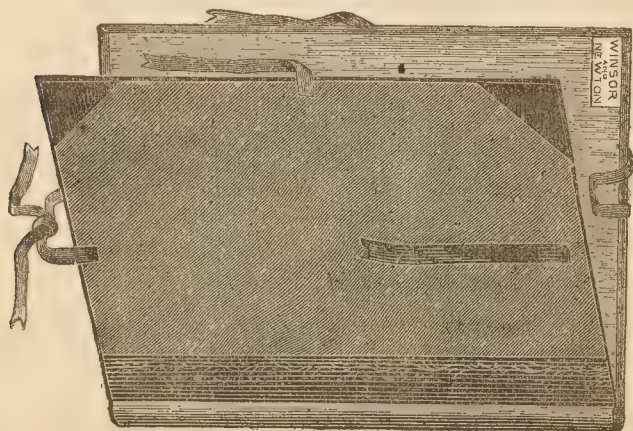
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				s.	d.	s.	d.	s.	d.
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Royal	22	"	17½	0	7	0	9	1	0
Imperial	28	"	20¼	1	0	1	3	1	9

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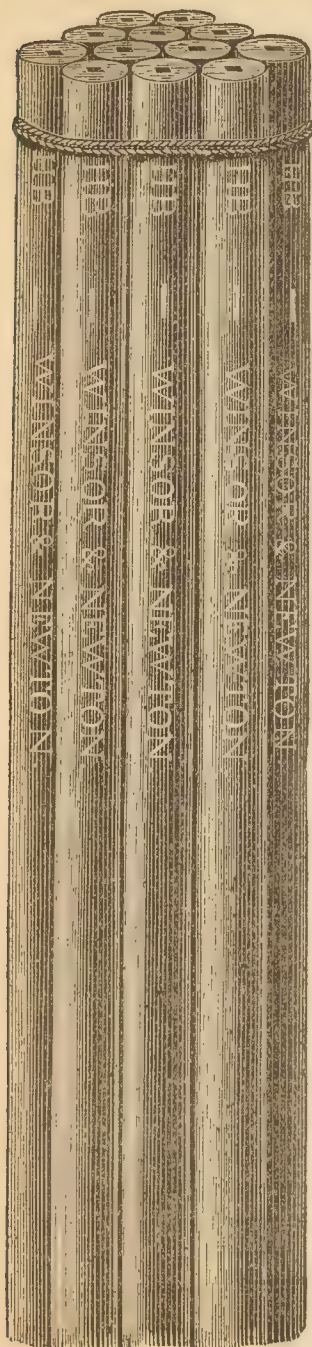
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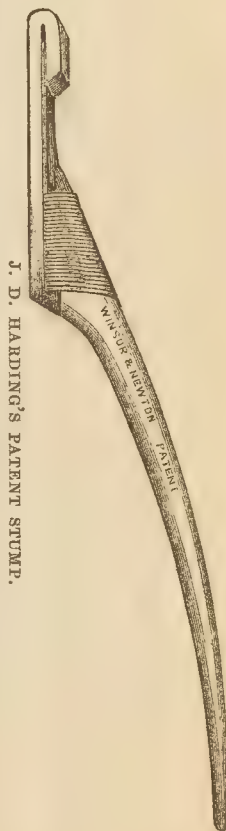
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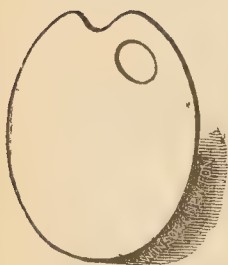
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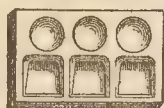
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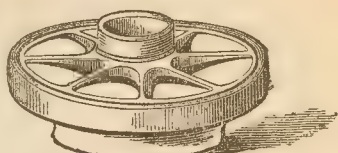
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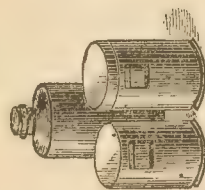
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8 ditto ditto . . . "	1	0	5 ditto . . . "	1	0
9 ditto ditto . . . "	1	3	6 ditto . . . "	1	3
10 ditto ditto . . . "	1	6	8 ditto . . . "	1	6
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8 ditto ditto . . . "	1	0	Centre Slant . . . "	0	9
10 ditto ditto . . . "	1	6	Box or 3 Slant Well Slabs . . . "	0	6
3 Square divided flat Tiles . . . "	0	6	5 Slant Well Slabs . . . "	1	6
6 ditto ditto . . . "	1	0	No. 1 Ink and Colour Slabs . . . "	0	4
9 ditto ditto . . . "	1	6	No. 4 ditto ditto . . . "	0	6
12 ditto ditto . . . "	2	0	No. 11 ditto ditto . . . "	0	9
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No. 2 ditto . . . "	1	6	Round Slant and Basin (for Architects' Offices, &c.) . . . each	3	6
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No. 2 ditto ditto . . . "	4	0	2 ditto ditto . . . "	0	1½
No. 3 ditto ditto . . . "	5	0	2½ ditto ditto . . . "	0	1½
3½ inches by 2¼ Tiles (Bartholomew's) . . . "	0	6	3 ditto ditto . . . "	0	2
2½ inch Saucers (Woolwich) . . . "	0	1½	4 ditto ditto . . . "	0	2

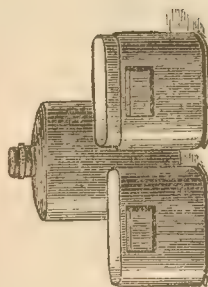
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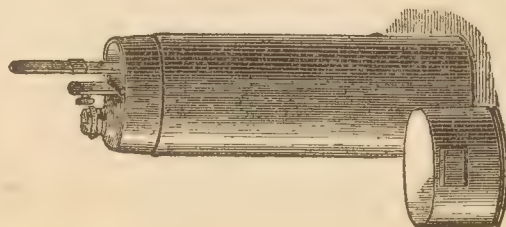
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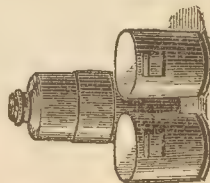
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Round Water Bottle
and Cups.



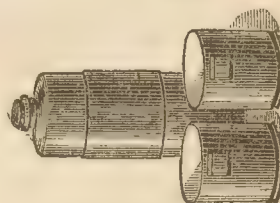
No. 7. 4s. 6d. & 7s. 6d.
Flat Oval Water Bottle
and Cups.



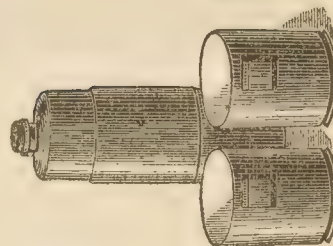
No. 2. 7s. 6d.
Sketcher's
Water Bottle and
Brush Case complete.



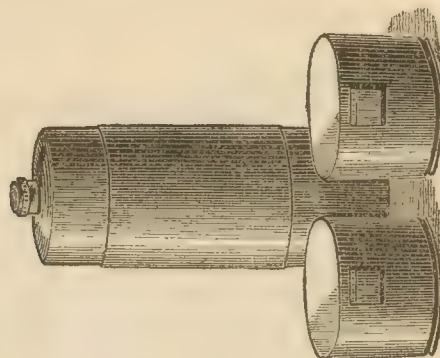
No. 3. 3s. 6d. & 5s. 6d.
Small Oval
Water Bottle
and Cups.



No. 4. 4s. & 6s. 6d.
Middle Oval
Water Bottle
and Cups.



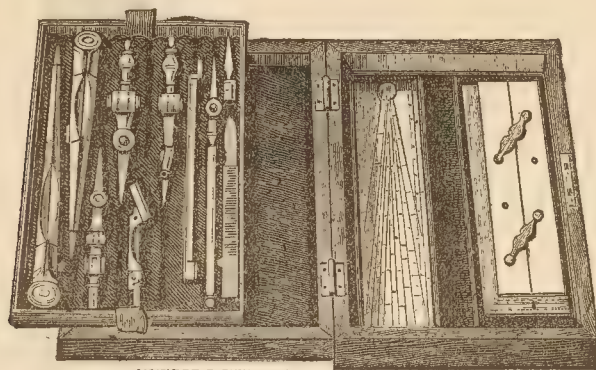
No. 5. 5s. & 8s. 6d.
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No. 6. 6s. 6d.
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